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5 January, 1918.

Vol. XIII.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the two weeks ending December 29, the maximum temperature was 80, minimum 17, and greatest daily range, 41. The weather has been dry and for the most part pleasant, though there were two rather severe "northers". The first severe freeze of the season on December 9, when the minimum temperature was 15, did much injury to tender plants. Apparently, a large proportion of the field peas in the rotation experiments were killed and a very poor stand remains. This was rather surprising inasmuch as the hardiest variety, Kaiser, in the variety test two years ago was planted this year. This was one of the varieties which practically escaped injury in 1916 when other varieties were severely injured and entirely killed. The indications are that citrus plants were killed to the ground and some injury was done to palms and other ornamentals.

Not much field work was done. Some plowing was done in fields A-3, A-1 and C-5. Manure was disked in on the rotation plats which had been manured and some manure was hauled on the garden and the lawn. Some wood was hauled. Considerable time was spent repairing fences. Volunteer oats which the disk failed to kill were hoed from the rotation plats and from field C-4.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Uncompahgre.

Fifteen farm visits were made during the week ending December 22 and calls were received from fourteen farmers for services and information.

There has been considerable trouble on the farm of Mr. Meeker during the week from necrobacillosis. This farmer has lost 8 pigs during the week. The remainder of the herd are being fed disinfectant solution and a general clean up of the premises has been suggested.

The matter of surveying conditions relative to the forming of a bull association has been taken up again and some interest is being manifested.

One illustrated lecture on hogs and sheep was given to an open session of Oak Grove Grange on Tuesday evening. Mr. Nevins, County Agent of Montrose County was present also and spoke on farm bureau organization.

A number of the potato growers have discovered dry rot in their potato cellars and the potatoes are unfit to sell. This, and the general lowering of price to \$1.00 per hundred, has caused a heavy demand for hogs to utilize the crop.

Two hog feeding tests were requested during the week by new farmers.

Boise.

Meetings and office work occupied the week ending December 22.

Last week occurred the annual Shorthorn sale of W. A. Hall, of Middleton, who has been breeding purebred Shorthorns for about five years. Twelve bulls including the herd bull, which brought \$1000.00, sold for an average of \$321.04. These were nearly all calves, part of Mr. Hall's breeding, and the rest bulls which Mr. Hall had brought in to fill his sale. A yearling purchased at the Portland sale for \$375.00 sold for \$430.00. Most of the stuff was plain. Nine head of females sold for an average of \$426.41, \$630.00 being the top. This was considerably higher, quality considered, than the average of the Portland sale. Mr. Hall paid \$1600.00 for a 2 year old heifer at Portland, which he keeps in his herd.

Shoshone.

During the week ending December 22, returns were received on the cooperative shipment of a car of cattle, which was shipped December 6. They were sold in Omaha December 18, which was 12 days after they were shipped. All kinds of freight is greatly delayed now. Steers sold for \$6.25 to \$8.50, bulls for \$6.85, Cows for \$5.75 to \$7.25 and heifers for \$7.25.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone (continued).

The cattle weighed 25,400 pounds in Billings at 5:00 P. M., before they were fed, and 26,025 pounds at 8:30 P. M. They weighed 26,660 pounds in Omaha. They evidently had not got a good fill in Billings during the three hours between weighings. The car that was shipped December 13 got a 1200 pound fill in Billings, but the weights in Omaha have not been reported.

Nine bulletins on butchering on the farm were distributed this week, due to responses from the article on butchering published in the local papers last week.

Several calls were received regarding the advisability of feeding dried beet pulp. Two cars will be fed by farmers here this winter. One car has already been received and the other is expected at any time.

Truckee-Carson.

During the week ending December 23 there were received 43 calls for assistance and thirteen farm visits were made. Four outbreaks of black leg have been reported during the week. Post mortems were held in two cases. On all the farms where black leg was reported vaccination was resorted to at once. On one farm, where loss was sustained, the animals that were lost were those that were not vaccinated two weeks previous when the rest of the calves were vaccinated, thus showing the importance of vaccinating every animal in a herd two years of age and under.

Considerable trouble has been reported recently due to quinsy or laryngitis in hogs. This difficulty seems to attack hogs during the winter months in all conditions and of all ages. Death is usually very sudden and unexpected. The affected hogs appear to be in very little distress during the day, but are found dead the next morning. The symptoms are difficult breathing and coughing and difficult swallowing. These symptoms are caused by inflammation and congestion of the tonsils, larynx and pharynx. Very often a considerable swelling is noticed under the jaw. The hog refuses to eat because of the pain experienced in swallowing. The methods of treatment which have been quite satisfactory here are first providing warm, dry, well ventilated sleeping quarters and laxative feed. Local treatment of throat is very essential. Ammonia linament for external application is used according to the following formula:--Liquid ammonia, one part; turpentine, one part; raw linseed oil, six parts. In severe cases this formula has been changed to liquid ammonia two parts; turpentine, two parts; and raw linseed oil, eight parts. As internal treatment for throat and tonsils, the following electuary is used:--One teacup full of thick syrup, two drams of tincture of aconite, one dram tincture of belladonna, two drams chlorate of potash, one ounce of powdered

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Field Notes.

Truckee-Carson (continued).

ginger and enough middlings or corn meal to make a very thick sticky paste. A tablespoonful of this mixture is smeared on the inside of the pig's mouth twice a day. The throat of the pig in this way is gradually bathed with medicated syrup. It is very important that affected pigs be not allowed to go into the night without treatment. Otherwise, they are very likely to be found dead from suffocation the next morning.

Considerable trouble is experienced with throat trouble in cows and calves in this locality with much the same symptoms as shown in the hogs. The application of hot fomentations to the throat followed by the rubbing in of ammonia linament has always brought quick relief.

WESTERN IRRIGATION AGRICULTURE.

COMPARISON OF PREWAR AND PRESENT PRICES
FOR CERTAIN AGRICULTURAL COMMODITIES.

The Monthly Crop Report for December, 1917, contains some interesting figures bearing on the prices paid for certain agricultural commodities in prewar times and at present. The table below, which has been compiled from the Crop Report, gives comparisons of farm values on December 1, 1917 and the 5-year December 1 averages for certain crops:

Crops	Unit	Farm Value December 1		
		1917	Average 5 years 1911 - 1915.	Increase Per cent
Corn,	Bushel	\$ 1,283	\$ 0.597	114.9
Wheat, .....	..do..	2.009	0.875	129.6
Oats, .....	..do..	0.669	0.385	73.8
Barley, .....	..do..	1.137	0.580	96.0
Flaxseed, .....	..do..	2.970	1.400	112.1
Rice, .....	..do..	1.894	0.885	114.0
Potatoes, .....	..do..	1.229	0.604	103.5
Hay, tame,	Ton	17.090	11.880	43.9
Cotton,	Pound	0.277	0.100	177.0
Sugar beets,	Ton	7.340	5.630	30.4
Apples,	Barrel	3.660	2.120	72.6
Peaches,	Bushel	1.360	1.030	32.0

The publication referred to does not give 5-year December 1 average figures for live stock and live stock products; but it does contain figures showing farm values for these commodities on November 15, 1914, and November 15, 1917. Certain of these figures are presented in the following table, in which, however, the butter prices shown are Elgin quotations for creamery extras December 1, and the cheese prices are New York quotations December 1:

Class	Unit	Farm Value, November 15		
		1917	1914	Increase, %
Hogs,	Cwt.	\$ 15.31	\$ 7.00	119
Beef cattle, .....	..do.	8.21	6.02	36
Veal calves, .....	..do.	10.66	7.78	37
Sheep, .....	..do.	10.20	4.68	118
Lambs, .....	..do.	13.79	6.14	124
Wool (unwashed),	Pound	0.559	0.181	209
Milk cows,	Head	75.00	58.77	27
Butter (creamery extras, Elgin, Dec. 1),	Pound	0.465	0.323	44
Cheese (Colored, New York, Dec. 1),do.	0.235	0.145	62

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

IRRIGATION OF CROPS IN ROTATION.

In reporting the irrigated crop rotation data for 1917, Mr. Aune observes that certain plats of potatoes following alfalfa suffered from a deficiency of irrigation due to the fact that the majority of the potato plats were not following alfalfa and irrigation was applied to all potato plats uniformly. The question is raised as to the permissibility of using different irrigation schedules for the potatoes so as to meet the needs of plats having different histories.

It seems proper to use an irrigation schedule that will best meet the requirements of the growing crops even at the sacrifice of uniformity for all plats of the same crop in the field, just as it is necessary to use different schedules of cultural operations for the same crop, depending upon the condition of the plat as influenced by the preceding crop. In other words, good farm practice should be used in cultural operations and in irrigation, with only such departures from uniformity of treatment as are requisite.

C. S. S.

Truckee-Carson.

Mr. J. F. Breazeale of Riverside, California was a visitor at the Experiment Farm during the week ending December 8.

Mr. Headley made a trip by auto early in December to Standish and Susanville, California, to secure soil samples of the Honey Lake region for experimental purposes.

Sugar beets were harvested from the rotation plats late in November. The yields were low because of the relatively large areas of hardpan soil, which scarcely permits either water, beet roots, or beet plows to penetrate. Yields recorded are as follows:

Plat	Area, acre	Yield per acre, tons
D-7	.51	7.67
D-7	.49	1.73
E-8	.71	1.25

A small silo has nearly been completed. It is patterned after the "Gurler" silos. The dimensions are 6 feet x 18 feet. It will be filled with beet pulp as soon as completed but will be used after this season to take care of the corn from the rotation plats.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson (continued).

Sales from the Farm this year have been as follows:

3450 lbs. of wheat @ \$3.50 per cwt.,	.....\$120.75
318 " " " @ 3.25 " "	..... 9.34
17 hogs (3132 lbs.),	..... 474.25

Pig Feeding Experiment.

In this experiment, one lot of 9 hogs were fed a 5% total grain ration made up of rolled barley, shorts and tankage in the following proportions: barley, 44; shorts, 15; tankage, 7. On the 29th of November, shorts were discontinued (no more being available) until December 5, the close of the experiment. The per cent daily gain was .89; the amount of grain required to produce one pound of gain, 4.7 pounds.

The other lot were given, by means of a self feeder, an unlimited supply of barley, shorts and tankage for the first 11 days, after which shorts were not available. The daily gain was 1.05%, and the grain required to produce one pound of gain was 5.6 pounds.

It appears that the self fed lot made more rapid gains than those fed by hand, but the gains of the former were more expensive.

The price received on the 5th of December when sold was 15-1/2 cents live weight. The cost of grain fed was 3 cents per pound, the local retail price of tankage, barley and shorts having been the same for each, viz. \$60.00 per ton. The self-fed lot were therefore fed at a small loss, as it cost 16.8 cents to produce a pound of gain. The other lot had a slight margin of profit.

The experiment with tomato varieties in 1917 was not very satisfactory although the season was unusually favorable. The vines made unsatisfactory growth because of having been planted on a plat which had been covered with raw soil to a depth of about 8 inches 2 years before. The earliest varieties were Earlibell, Earliana, Yellow pear and Early Jewel. The best yielding varieties were Earlibell, Early Prolific, Earliana, Perfection and John Baer. The Earlibell was purchased from the Gurney Seed Nursery Company, Yankton, South Dakota. The Early Prolific seed was produced by a local grower, Mr. Fairchild, near Reno. Mr. Fairchild specializes in the growing of tomatoes and claims to secure seed from selected plants. The highest yielding strain of Earliana was purchased from the Livingston Seed Company, and Perfection and John Baer from the C. C. Morse Company.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Leave Without Pay.

Particular attention is called to the following memorandum dated January 4 and signed by the Secretary.

"All applications for leave without pay must be approved by the Chief Clerk of the Department. IN NO CASE SHALL SUCH LEAVE BE TAKEN UNTIL THE APPLICANT HAS BEEN ADVISED OF ITS APPROVAL. Each application must be supported by a memorandum setting forth the reasons for which the leave is requested. This procedure will supersede all rules and regulations in conflict herewith."

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Uncompahgre.

The greater part of the week ending December 29 was spent in attending the meeting of the Delta County Live Stock Association and in assisting with arrangements for the meeting of the Montrose County Association.

One of the features of the meeting at Delta was a resolution that had to do with an improvement of the system of shipping cattle to market.

Several losses among cattle from blackleg have occurred recently in the valley. Farmers are asking for information regarding the use of the blackleg vaccine as a result. Calves were vaccinated for two farmers during the week.

There have been several reports from farmers regarding hog sickness. Upon investigation the trouble has been found to be necrobacillosis. It has been showing up on the udders of the sows in several cases. So far no trouble has been discovered in the form of sore mouth. The disease is attacking the young pigs in the form of enteritis mostly.

Butterfat has advanced to 50¢ per pound. There is a tendency for hay prices to come down in the valley. There has been no cold weather as yet and no snow has fallen so that it has not been necessary to feed any hay. This has saved many cattle for the valley which otherwise would have been shipped out and sold.

Boise.

Up to Monday of the week ending December 29, practically none of the Shorthorn cattle brought in last summer by the Caldwell Commercial Bank had been sold. They have not had sufficient feed since their arrival here and are not in good condition, especially cows which are suckling calves.

The bank recently offered to Wilson Bros., Poland China hog breeders, of Greenleaf, through A. L. Wilson, the top of the bunch at about \$300.00 per head for cows with calves at side, on very fair terms, and Mr. Wilson selected 23 head, including a \$1200.00 two-year old bull. Although the cows are thin, they show considerable character and should make a very good foundation on which to build up a fine herd. The bull is one of the best ever brought into the State. Calves show considerable promise.

Truckee-Carson.

The second cooperative shipment of hogs this season was shipped out during the week ending December 29. The shipment consisted of one car of 99 hogs and was sent to Reno. Another shipment is planned for the coming week. The latter shipment is the only one so far that has been gotten together without the assistance of this office.

A cooperative shipment of cattle has been arranged for to leave the valley on January 3rd. This is the first cooperative shipment of cattle. It will be of interest to note that the ranchers taking part in this first cooperative shipment of cattle, also participated in the first cooperative shipment of hogs leaving this valley. This first trial shipment will consist of one car load of discarded cows and dairy steers. All the animals are well finished on alfalfa hay. If the results of this shipment are satisfactory, several other cooperative shipments will be sent out of this valley in the near future.

WESTERN IRRIGATION AGRICULTURE.

Belle Fourche.

SUMMARY OF RESULTS WITH PIGS ON ALFALFA PASTURE IN 1917.

There is given below a summary of the results secured with pigs on alfalfa pasture at the Belle Fourche Experiment Farm in 1917. This summary has been compiled from reports made by Mr. Sam H. Bober, who is employed by the Animal Husbandry Division and is in direct charge of the experiments.

There were 4 duplicate lots of hogs, both in the spring period from May 28 to July 11 (44 days) and in the summer period from July 12 to September 25 (75 days). Fall pigs were used in the spring period and spring pigs in the summer period, except in the lots which received no grain. In these lots, fall pigs were used throughout the entire season, two of the three pigs in each of the "no grain" lots being continued from the spring period into the summer period.

Each lot had access to 1/4 acre of alfalfa grazed by the two-pasture method. All the lots were treated uniformly except as to the supplementary grain rations. These varied as follows:

- Two lots --- no grain.
- Two lots --- 2% ground barley (fed dry).
- Two lots --- 2% shorts (fed wet),
- Two lots --- 2% shelled corn (fed dry).

The results secured during the spring period are summarized below:

Items	No grain		2% barley		2% shorts		2% corn	
	Lot 1	Lot 5	Lot 2	Lot 6	Lot 3	Lot 7	Lot 4	Lot 8
No. of pigs in lot, ..	3	3	4	4	4	4	4	4
No. of pigs per acre, ..	12	12	16	16	16	16	16	16
Av. initial wgt., lbs.	126	126	114	115	114	115	115	115
Av. final wgt., lbs.	135	138	162	157	162	165	158	157
Av. daily gain, lbs.	0.21	0.27	1.07	0.96	1.07	1.13	0.97	0.94
Gain per acre, lbs.	112	144	756	678	760	798	684	664
Value of gains per A. @ 7¢ lb	\$7.84	\$10.08	\$52.92	\$47.46	\$53.20	\$55.86	\$47.88	\$46.48
Value of grain fed per acre @ 1¢ lb., ..	---	----	19.28	19.28	19.28	19.28	18.80	18.80
Ret. per A.	<u>\$7.84</u>	<u>\$10.08</u>	<u>\$33.64</u>	<u>\$28.18</u>	<u>\$33.92</u>	<u>\$36.58</u>	<u>\$29.08</u>	<u>\$27.68</u>
Lbs. grain per 100 lbs. gain.	---	----	254	284	254	241	273	284

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche (continued).

(Summary of Results With Pigs on Alfalfa Pasture in 1917 continued).

Spring Pigs - Summer Period - July 12 to Sept. 25. - 75 Days.								
Items.	No grain		2% barley		2% shorts		2% corn	
	Lot A	Lot B	Lot 1	Lot 4	Lot 2	Lot 5	Lot 3	Lot 6
No. of pigs in lot, ..	2	2	7	7	7	7	7	7
No. of pigs per acre, ..	8	8	28	28	28	28	28	28
Av. initial wgt., lbs.	118	119	42	42	42	42	42	42
Av. final wgt., lbs.	117	116	80	80	83	81	80	80
Av. daily gain, lbs.	0	0	0.51	0.50	0.54	0.52	0.50	0.51
Gain per acre, lbs.	-8	-12	1078	1058	1144	1104	1058	1076
Value of gains per A. @ 7¢ lb	---	---	\$75.46	\$74.06	\$80.08	\$77.28	\$74.06	\$75.32
Value of grain fed per acre @ 1¢ lb., ..	---	---	26.24	26.24	26.24	26.24	26.24	26.24
Ret. per A.	-\$0.56	-\$0.84	\$49.22	\$47.82	\$53.84	\$51.04	\$47.82	\$49.08
Lbs. grain per 100 lbs. gain	---	---	243	248	229	237	248	243

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Belle Fourche (continued).

(Summary of Results with Pigs on Alfalfa Pasture in 1917 continued).

For purposes of comparison, the data in the preceding tables showing gains per acre, pounds of grain consumed per 100 pounds of gain, and the returns per acre, calculated on the basis of 7-cent pork and 1-cent grain, are brought together in the table below.

Summary of Results with Spring and Fall Pigs on Alfalfa Pasture,
Belle Fourche, 1917.

May 28 to September 25 -- 119 Days.

Items.	Fall Pigs Spring Period	Spring Pigs Summer Period	Entire Season
Length of period, days,	44	75	119
Total gain per acre, lbs.,			
No grain, $\frac{1}{2}$ /.....	112	-8	104
No grain, $\frac{1}{2}$ /.....	144	-12	132
$2\frac{1}{2}\%$ Barley,	756	1078	1834
$2\frac{1}{2}\%$ Barley,	678	1058	1736
$2\frac{1}{2}\%$ Shorts,	760	1144	1904
$2\frac{1}{2}\%$ Shorts,	798	1104	1902
$2\frac{1}{2}\%$ Corn,	684	1058	1742
$2\frac{1}{2}\%$ Corn,	664	1076	1740
Pounds of grain per cwt. gain,			
$2\frac{1}{2}\%$ Barley,	254	243	250
$2\frac{1}{2}\%$ Barley,	284	248	263
$2\frac{1}{2}\%$ Shorts,	254	229	239
$2\frac{1}{2}\%$ Shorts,	241	237	239
$2\frac{1}{2}\%$ Corn,	273	248	258
$2\frac{1}{2}\%$ Corn,	284	243	258
Value of gains per acre, @ 7¢ less cost of grain @ 1¢, .			
No grain,	\$ 7.84	-\$0.56	\$ 7.28
No grain,	10.08	- 0.84	9.24
$2\frac{1}{2}\%$ Barley,	33.64	49.22	82.86
$2\frac{1}{2}\%$ Barley,	28.18	47.82	76.00
$2\frac{1}{2}\%$ Shorts,	33.92	53.84	87.76
$2\frac{1}{2}\%$ Shorts,	36.58	51.04	87.62
$2\frac{1}{2}\%$ Corn,	29.08	47.82	76.90
$2\frac{1}{2}\%$ Corn,	27.68	49.08	76.76

$\frac{1}{2}$ /Fall Pigs used throughout the season.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson.

During the two weeks ending January 5, the maximum temperature was 67, minimum, 14, and precipitation 0.0 inches.

During this period manure was hauled to fields A-1 and A-2. Two sacks of Gypsum were spread over the top of each load of manure. The application of the manure was at the rate of about 16 tons and the gypsum 1-1/2 tons per acre.

Bids were sent out for lumber for a cow barn, and ensilage cutter, and for 4 tons rolled barley.

The feeding of the six Duroc-Berkshire crosses was continued in the same manner as reported for the last period. They made very satisfactory gains, consuming 4.55 pounds grain for each pound of gain. At the present cost of feed, 3-1/4 cents per pound, the cost of feed is equal to the value of the increase in weight. A detailed statement of the feeding test follows:

Report of Feeding Tests Made with Six Duroc-Berkshire Pigs,
December 15, 1917 to January 7, 1918.

Number of Pigs,	6
Initial weight, lbs.,	397
Final weight, lbs.,	564
Gain, lbs.,	167
Gain, percent,	1.54
Barley fed, lbs.,	690
Tankage fed, lbs.,	69
Total concentrate fed, lbs.,	759
Grain per pound of gain, lbs.,	4.55

OPEN SHED FOR DAIRY COWS.

Under the above title, the following statement appears in the Department's Weekly Newsletter for January 16, 1918:

"In experiments at Beltsville, Maryland, by the Bureau of Animal Industry, United States Department of Agriculture, a warm barn, commonly deemed essential for large milk production during the winter months, proved to be somewhat less satisfactory than an open shed. Experiments extending over three years showed that cows housed in the open shed consumed a little more feed, required more bedding, and slightly increased labor cost, but because more milk was produced and on account of the lower cost of housing, the open shed was found to be somewhat more economical."

LEAVE.

The practice at some of the field stations of holding applications for leave until a considerable number have accumulated is frowned upon by the Chief Clerk of the Department, and it is requested that these slips be sent in immediately.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
FIELD NOTES.

Minidoka.

During the week ending December 15, the Commissioners of Cassia County made an appropriation for the employment of an emergency county agent for the period of the war. It is hoped to have a man in the field by January 1. On the Project, the work will be mostly with the agronomy problems, similar to the work in Minidoka County.

As a result of recent conferences with the tester of the Twin Falls Cow Testing Association and Dairy Division Officials, a few of the best herds on the Minidoka Project will be entered in the association for next year. Seven herds, embracing a total of 127 cows, have been entered for this work. A larger number could have been secured had not the time of the tester on the project been limited to one week in each month. The work at this time when the dairy industry is undergoing a re-adjustment will be of great value in demonstrating the best methods.

HOGGING-OFF FIELD PEAS.

The following summary of results secured in two pea-hogging enterprises has been compiled from Mr. Rinehart's report for the month of November. The first hogging test was conducted on the farm of Mr. George Schultz, near Burley, in a field of "White Canadian" field peas. This test included 29 grade Duroc-Jerseys and 9 grade Poland Chinas. The Duroc-Jerseys included one stag and one runt. The Durocs were well-bred and of the most improved lard-hog type. The Poland Chinas also were well-bred but were not in as good condition as the Durocs, as they had not had as good care during the summer. At the time the test ended there was still some feed left in the field. The results secured up to November 1, when the test was concluded, are summarized in the table on the following page.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

(Hogging-Off Field Peas, continued).

Items.	Duroc- Jerseys	Poland Chinas	Total
Date begun,	Sept. 6	Sept. 17	Sept. 6
Date ended,	Nov. 1	Nov. 1	Nov. 1
Number of days,	55	44	55
Number of hogs,	30	9	39
Average initial weight, lbs.,	109 $\frac{1}{2}$	93	113 $\frac{2}{3}$
Average daily gain, lbs.,	1.67 $\frac{1}{2}$	1.30	---
Total gain, lbs.,	---	---	3227
Area of field, acres,	---	---	3.4
Total gain per acre, lbs.,	---	---	949
Value of gains per acre @ \$14.60 per cwt. (market price),	---	---	\$138.56

 $\frac{1}{2}$ / Excluding one stag and one runt. $\frac{2}{3}$ / Including all hogs.

Another pea-hogging test was conducted on the farm of Mr. Ernest Wysong, near Rupert. This test was made for two purposes: first, to secure information regarding the value of field peas for hogging, and, second, to observe the gains made by fall pigs and by spring pigs in the same field of peas. The hogs used consisted of 13 shotes in the fall of 1916, and 26 spring shotes, most of them born in April, 1917. The fall pigs were mixed and of rather poor type. They had been wintered on beets, hay, and a small quantity of barley. During the summer they had been pastured on 4 acres of alfalfa, supplemented with a small ration of barley. They were thin when turned into the pea field and on the market would have been classed as light mixed hogs. The spring pigs were Poland China grades. During the summer, they had been pastured in the alfalfa field with the fall pigs. The field of peas contained a total of 10.19 acres. This was divided by a fence which enclosed 3.63 acres in the south part, where all the hogs were held until October 20, when the fall pigs were sold. At this time the spring pigs were turned into the north field. The gains credited to the south field are those made by the fall pigs and $\frac{45}{68}$ of the gains made by the spring pigs during 45 of the 68 days these pigs were hogging peas. The crop of peas was good, although there were some poor spots due to a lack of proper leveling. The variety of peas was "Marrowfat". The land is sub-irrigated. The results secured are summarized in the table on the following page.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

(Hogging-Off Field Peas continued).

Items.	Fall Pigs	Spring Pigs	Total
Date begun,	Sept. 5	Sept. 5	Sept. 5
Date ended,	Oct. 20	Nov. 12	Nov. 12
Number of days,	45	68	68
Number of hogs,	13	25	38
Average initial weight, lbs.,	151	64	94
Average total gain, lbs.,	98	100	99
Average daily gain, lbs.,	2.17	1.47	--
Total gain from this field,	----	----	2934
Area of field, acres,	----	----	3,63
Total gain per acre, lbs.,	----	----	808
Value of gains per acre at market prices, (Fall pigs at \$15.25 per cwt., spring pigs at \$14.00 per cwt)	----	----	\$117.54

Shoshone.

During the week ending December 29, returns were received on the cooperative shipment made December 13. The cattle were sold six days after they were shipped. The expense of shipping was 61 cents per cwt. The load weighed 25,700 pounds just off of the cars in Billings and seven hours later, after a fill, they weighed 26,900 pounds. The sale weights in Omaha totaled 26,350 pounds. Cows sold for \$5.50 to \$7.40. Steers sold for \$6.50 to \$8.00. Bulls sold for \$6.25 to \$7.25.

Another meeting of the potato growers was held in this office this week, 25 of the leading growers being present. A committee was appointed to draw up articles of incorporation to be submitted at another meeting. Sentiment seems to be in favor of incorporating and hiring a manager to sell for the corporation.

Boise.

The weather continued mild throughout the week ending January 5. January 1 was like summer and the rest of the week has been almost as warm with heavy fogs and some rain. Grass is beginning to grow and volunteer peas, six inches high, have been seen growing in a garden. No snow is in sight on the mountains from the valley but some reports say that there is plenty of snow on the higher ridges. The Reclamation Service is already filling the Deer Flat and Arrow-rock reservoirs so that there should be no question about having

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Field Notes.

Boise (continued).

them filled from the surplus water in the river before the irrigation season opens.

W. A. Hall, whose Shorthorn sale was mentioned in a recent report, brought in a herd bull from Ontario, Canada, this week. This bull, a two-year old, sired by imported Rightsort, is one of the best brought into the Boise Valley, possibly the best. Mr. Hall, who received \$1000.00 for his former herd bull, paid \$2000.00 and freight charges for this one.

Uncompahgre.

During the week ending January 5, 13 farms were visited and calls for service were received from 17 sources.

Most of the week has been taken up with matters of care of hogs and hog problems and one day with dairying problems.

Due to the congested condition of the railroads, there has been heavy shrinkage in hogs being sent to market.

On Saturday of this week, the County Agent called a meeting of farmers interested in the formation of a Farm Bureau. This meeting resulted in the appointment of a committee for the purpose of arranging for a permanent organization.

Some Sugar Beet Yields in Eleven Factory Districts in 1917.

In the "Utah Farmer" for January 12, 1918, there appears a report of the prizes awarded by the Utah-Idaho Sugar Company for 1917. The report includes, for eleven of the factory districts, lists of what presumably were more than average yields. The report states, "Because of the unusual late spring, and the short growing season, the average tonnage per acre was not as high this year. Some good results have been obtained and are given below." Then follows a list of acreages and yields secured by certain growers in each of eleven districts. The highest yield reported in each of the eleven groups is shown below:

District	Town	Highest Yield	
		Tons per acre	Acreage
Sugar City, Idaho,	Teton, Idaho, ...	15.80	50
Shelley, Idaho,	Shelley, Idaho, .	12.13	23
Garland, Utah,	Tremonton, Utah,	24.00	5
Lehi, Utah,	Lehi, Utah,	28.00	4
Payson, Utah,	Payson, Utah, ...	15.00	20
West Jordan, Utah,	Sandy, Utah,	21.00	9
Elsinore, Utah,	Salina, Utah, ...	23.50	4.5
Spanish Fork, Utah,	Salem, Utah,	18.00	16
Yakima, Washington,	Mabton, Wash., ..	40.00	2
Grants Pass, Oregon,	Talent, Oregon, .	27.00	4
Fallon, Nevada,	Standish, Calif.,	18.00	--
Fallon, Nevada,	Fallon, Nevada, .	14.00	--

San Antonio.

During the two weeks' period ending January 12, the maximum temperature was 80, minimum 9, and the greatest daily range 66. The severest cold weather in many years in this section was experienced on January 10, 11 and 12. Approximately an inch of sleet and snow fell on the night of January 10, a part of which remained on until the fourteenth. It is not possible to tell yet the extent of damage to vegetation, but it appears likely that a large part of tender plants were badly damaged.

The principal field work accomplished was plowing. All plowing, except on the rotation plats which are regularly plowed in February, is now finished. Some time was spent in filling in the old pond on the farm. Some labor was used in repairing buildings and at other miscellaneous work.

Mr. Arthur A. Bryan arrived on December 31, to assume his duties as assistant.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Yuma.

During the week ending December 22, 1917, the maximum temperature was 82, minimum 31.5, and greatest daily range 47.

No irrigation was made this week. Alfalfa harvest was completed on nearly all alfalfa borders on the farm. All cotton from Pima progeny plantings on border C-44 was picked. Also, Dwarf Milo was harvested from D-16, E-5 and 6, and E-42 and 43. The grain from the latter field is very good and will be carefully threshed and handled without chance of mixture, that this stock may be used in making a distribution of planting seed for next season.

Fields D-38 and 39 were planted to Sonora wheat. Leveling on new lands on the "D" series was continued and the remainder of pressure gate turnout boxes were set on irrigating ditches.

During the week ending December 29, 1917, the maximum temperature was 80, minimum 31.5, and greatest daily range 46.

No irrigation was made. Practically all labor employed during this week was utilized in cleaning silt from irrigation ditch system and in clearing and leveling land on the "D" series.

During the week ending January 5, the maximum temperature was 82, minimum 32.5, and greatest daily range 49.

An irrigation of eight acres was made. The cleaning of ditches and leveling on new land was continued throughout the week. Stalks were cut on fields A-10-3 and E-5 and 6. Fields A-10-5, A-14-7, C-35, and D-13 and 16, were plowed. The last picking of cotton plats was begun.

Mr. H. L. Westover, of the Office of Forage-Crop Investigations, arrived at the station on the thirty-first to take up study of the winter growth of alfalfas in this region. Mr. F. E. Devine, of the Bureau of Markets, was also at this station to attend to the classing of cotton samples from the outturn of the Winterhaven Egyptian Cotton Gin.

Mr. Blair spent several days of this week in the Imperial Valley, at Chula Vista, and Los Angeles, California. Cooperative flax plantings, planned to be made on the mesa lands near Chula Vista, have been delayed, due to the very dry weather which prevails in the coast country of Southern California.

During the week ending January 12, the maximum temperature was 80, minimum 28, and greatest daily range 43.

There was no irrigation made during this week. Cotton picking, cleaning of irrigation ditches, and clearing and leveling of new land were continued through the week. Manure was hauled to border A-9 in preparation for planting of early melons. All grape and berry plants were pruned.

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WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Yuma (continued).

It seems at this date that this region is not to experience temperatures low enough during the present winter to kill cotton plants, which is giving rise to considerable talk of ratooning cotton fields for a second year's crop. Unless low temperatures occur within the next ten days, no other serious frosts are likely to obtain.

Bermuda grass has continued to grow in fields during the winter without the dying that usually occurs, in many cases preventing the thorough burning of this weed pest on borders and ditch banks.

APPOINTMENTS.

Requests for appointments must in all cases contain the explicit statement that the appointee is a citizen of the United States. The appointing officers now insist upon having this information and if it is not given in the first instance, appointments are held up until its receipt.

It is also absolutely essential that all requests for terminations and acceptance of resignation be accompanied by statement of the reason for the employee's leaving the service, and if it is to accept employment elsewhere the name of the new employer and the wages paid should be stated.

Unless this information is received action in such cases will be delayed pending its receipt.

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FIELD NOTES.

Truckee-Carson.

An Experiment in Growing Turkeys.

During the past season, Mr. Cline, in cooperation with the Animal Husbandry Division, conducted an experiment in the growing of turkeys at the Truckee-Carson Experiment Farm, Nevada. The general purposes of the experiment was to secure more specific information than was available to the turkey growers of the Truckee-Carson project regarding the grain requirements of growing turkeys, and regarding feasible methods of pasturing these birds. There is given below a brief summary of Mr. Cline's detailed report on this work.

The turkeys were divided into 3 lots, which were treated as follows: Lot 1 had the run of a 4-acre tract of desert land. The vegetation on this area consisted of greasewood and other similar vegetation, and it was observed that the turkeys ate very readily the green shoots on the greasewood plants. The feed which the turkeys were able to secure on this tract was supplemented with a ration of cracked corn, 3 parts; wheat, 3 parts; bran, 1 part; meat scrap, 2 parts; bone meal, 1/2 part. Lot 2 had the run of 1/2 acre of alfalfa pasture and, in addition, the following supplementary ration: cracked corn, 3 parts; wheat, 3 parts; bran, 1 part. Lot 3 also had access to 1/2 acre of alfalfa pasture with the same supplementary feed as was given to the turkeys in lot 1.

During the season, serious difficulties were encountered with blackhead. This disease was combatted by treating the turkeys with sulpho-carbolate tablets at the rate of 2 grains per turkey twice daily. The losses from blackhead were checked by July 11, and on that date the regular experiment was started. During the entire experimental period it was necessary to combat blackhead in all the lots, and as the turkeys increased in size the dose of sulpho-carbolate was increased. The treatment was not continuous but was used only at intervals when the condition of the flock seemed to demand it.

The table on the following page shows the gains made and the grain requirement per unit of gain for the 3 lots during the experimental period of 164 days ending December 20.

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Field Notes.

Truckee-Carson (continued).

(An Experiment in Growing Turkeys, continued).

	Lot 1	Lot 2	Lot 3
Pasture	4 Acres Desert	$\frac{1}{2}$ -Acre Alfalfa	$\frac{1}{2}$ -Acre Alfalfa
Supplementary feed (fed without limit)	Cr. corn, 3 parts Wheat, 3 " Bran, 1 part Meat Sc. 2 parts Bone M. $\frac{1}{2}$ part	Cr. corn, 3 parts Wheat, 3 " Bran, 1 part ----- -----	Cr. corn, 3 parts Wheat, 3 " Bran, 1 part Meat Sc. 2 parts Bone M. $\frac{1}{2}$ part
Initial no. turkeys	38	35	34
Final no. turkeys	27	32	24
Date begun,	July 11	July 11	July 11
Date ended,	Dec. 20	Dec. 20	Dec. 20
Length of period, days,	164	164	164
Av. initial weight lbs.,	1.21	1.44	0.638
Average gain, lbs.	8.09	10.27	8.56
Average supple- mentary feed eaten per day per turkey, lbs.	0.277	0.272	0.307
Lbs. supplementary feed per lb. of gain,	8.02	5.00	5.88
Per cent daily gain	1.15	1.29	1.61

It would appear from the above figures that the desert range was relatively inefficient, since 8.2 pounds of supplementary feed was required for one pound of gain, as compared with about 5 to 6 pounds in lots 2 and 3, which were on alfalfa pasture. However, from July 30 to October 15, lot 1 showed the most economical gains of all. It might be pointed out that by October 15 the green vegetation on the desert tract was gone, whereas there was considerable green feed left on the alfalfa plats, thus giving lots 2 and 3 the advantage during the last 60 days of the period. When it is considered that lot 2 contained more thrifty turkeys than lot 1, and that lot 3 had the same feed as lot 1 plus alfalfa, and further that lot 1 made the cheapest gains during the period when the desert range was at its best, it appears that for turkey growing the native desert vegetation of this locality has more value than is usually attributed to it.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued).

(An Experiment in Growing Turkeys, continued).

The last period of 20 days showed a great falling-off in the percentage daily gain and a marked increase in the pounds of supplement required per pound of gain. With a few exceptions, all the turkeys were in prime market condition at the beginning of this last 20-day period. It appears, therefore, that for the best financial returns when turkeys are well-finished they should be put on the market without further delay, and that for the most economical returns, early turkeys, well developed, should be marketed if possible by Thanksgiving time.

If, under more favorable conditions with thrifty turkeys free from disease, it can be shown that these birds can make anywhere near as economical gains on feed as are possible with hogs, especially since the product is worth approximately twice as much per pound, the information would no doubt result in stimulating the turkey growing industry on the Truckee-Carson, as well as other similar projects with equally favorable natural conditions.

Tieton.

Sixteen farms were visited during the week ending December 8, eleven calls for assistance were answered, and thirteen office conferences were held. Two days of the week were spent in attending the annual Washington Irrigation Institute at Yakima. A half day was spent with county agriculturist Price, out-lining the program for the annual Farmers' School to be held at Yakima in January.

The local interest in keeping sheep on irrigated farms was well exhibited by the large farmer attendance at the Irrigation Institute on the half day given to lectures and discussions of sheep and irrigated pastures. This part of the program was handled principally by Mr. O'Donnell of the U. S. Reclamation Service, county agriculturists Lampson and Price, local sheep men, and this office. Particular emphasis was made upon desirable ways of starting farm flocks. Mr. O'Donnell stated that he believed that Yakima Valley farmers have failed to realize two million dollars annually because they have not used sheep to clean up alfalfa, grain stubble, fence rows, ditch banks and other wasted forage. He stated that he secured a profit of some ten to fifteen dollars per acre from sheep feeding on stubble and waste forage. The farmers attending this session gave more interest to the subject of grass pastures than has been exhibited in any previous meeting of Yakima farmers which the writer has attended.

The privately owned cheese factory in the Selah valley was destroyed by fire on the 6th; this factory has been in operation about

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

five months. The principle value to the Yakima Valley dairy industry has been because its competition with the market milk buyers has increased milk prices in its district.

Local market quotations for this week are as follows: Prime steers, \$7.50 to \$8.25; Prime hogs, 200 to 250 pounds, \$16.00; Select veal, \$9.00; Potatoes, \$18.00 to \$22.00 per ton; Alfalfa hay, f.o.b. loading point, \$20.00 to \$21.00 per ton, baled; Butter fat in cream, 50¢ per pound, and in whole milk, 55¢ per pound.

Minidoka.

The favorable weather of December continued throughout the week ending January 5. As the ground is unfrozen much plowing and leveling are being done. The favorable fall and winter will enable the farmers to get most of their crops in early, as much of the spring plowing is already completed.

The range stock is still on the desert or in fall pastures. A number of bands of sheep that had been on fall pastures have been taken back to the sage brush range. The feed on the public range is plentiful, but because of the lack of snow or rain the water problem is difficult. To date none of the large outfits have fed any hay. Compared with the conditions last year this has already made a saving of approximately 11,550 tons.

The hay marketing situation is causing considerable uneasiness. A meeting in regard to the situation was held at Rupert on Thursday evening under the auspices of the Farm Bureau. A representative of the Triangle Milling Company of Kansas City was present and offered \$18.00 per ton for choice, green alfalfa hay, Kansas City weights to be taken. As this means a shrink of at least 2 per cent, making the net price about \$17.60, the offer was not accepted. Some hay is being baled and shipped out at from \$18.00 to \$18.50 on board the cars but most of the farmers, acting on the advice of the State Farm Bureau, are holding for \$20.00. The price of baling is \$3.00 per ton. Some hay has recently been bought by sheep and feeder outfits at \$12.00 per ton, loose.

The first heavy snow of the season occurred during the week ending January 12. This was the beginning of the winter feeding period for the range and farm sheep and beef cattle. It is the latest on record. Practically all of the stock will go into winter in good shape.

As many of the sheep will be lambed in February, or early in March, with a normal spring they will be back on the range by March 20, hence the cost of wintering will be lower than the early estimates. A minimum of 200 tons of hay and a maximum of 300 tons are the amounts usually provided for a band of 1000 head of ewes. High-

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Minidoka (continued).

er lambing percentages are being secured in those bands in which the daily allowance is 4 pounds of hay per ewe and supplementary feeds of roots, beet pulp or grain given. Practically all the well bred farm flocks are being handled in this way this year.

On the farm of George Schultz, near Burley, where a pea-hogging test was concluded November 1, as reported in the Weekly Bulletin for January 19, the pea field was cleaned up by 10 hogs, with an average initial weight of 162 pounds, during a period of 37 days, beginning November 1. The gains made by these hogs during this period amounted to 279 pounds on 3.4 acres of pea stubble supplemented with 370 pounds of hay, 740 pounds of beets, and 200 pounds of wheat. If these supplementary feeds are valued at market prices, the peas would be credited with \$27.51, or \$8.09 per acre.

Shoshone.

During the week ending January 12, 5 farm visits were made and 50 office calls were received.

A cooperative shipment of one car of 33 cattle was made to Omaha, ten men cooperating in the shipment.

A movement was started to put a second band of sheep on the Forest Reserve.

A meeting of potato growers was held in this office to discuss the articles of incorporation and by-laws drawn up by the committee last week. Twenty-four men were present but definite action was deferred for a week.

The Water Users Association held their annual meeting and voted to send a committee to Washington to request the Reclamation Service to relieve this project of the expense of drainage, on the ground that the original building charge was supposed to cover the cost of drainage.

Boise.

Meetings and office work have been all that has been attempted during the week ending January 12.

The weather took a sudden change on Wednesday, the temperature dropping to about 20 degrees Fahrenheit during the day, and continuing low until Saturday when it rose again above freezing. The first snow of the winter fell on the 9th, and more fell the following three days. Roads are nearly impassable where they have not been graveled, making any but necessary travel impracticable. Meetings have been poorly attended on this account. The total attendance at the four meetings held was only 50.

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WESTERN IRRIGATION AGRICULTURE.
FIELD NOTES.

San Antonio.

During the week ending January 19, the maximum temperature was 65, minimum 22, and greatest daily range 42.

Practically no field work was done during the entire week. Some time was spent in repairing water pipes which were frozen by the cold weather of the previous week. Most of the time was spent in repairing fences and buildings.

Yuma.

During the week ending January 19, the maximum temperature was 77, minimum 31, and greatest daily range 41.

An irrigation of four acres was made. Nearly all labor for the entire week was employed in cotton picking, clearing and leveling, and the threshing of grain sorghums. On field A-9 cotton stalks were cut and the field was plowed for planting watermelons.

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FIELD NOTES.

North Platte.

Mr. George O. Unruh, of Chadron, Nebraska, has recently been appointed to take over the demonstration work in live stock industries formerly conducted by Mr. Charles S. Jones. Mr. Unruh's appointment is effective February 1 and it is expected that he will begin work immediately after that date.

Tieton.

Fifteen farms were visited during the week ending December 15, ten calls for assistance were answered and twelve office conferences were held. One day was spent with Messrs. Frevert of the U. S. Dairy Division, and Turnbow of the Dairy Department of the Washington State College, in discussing cheese factory management and the manufacturing and marketing of factory by-products. Another day was spent with these men in Spokane visiting dairy product dealers and city markets in regard to marketing cottage cheese, sweet cream, whole milk and skimmed milk cheese. The demand for dairy cows in the Wide Hollow district of the Project continues. Assistance was given in purchasing two cows this week. The interest in better cows likewise continues to increase and it is anticipated that three or four more Tieton herds will be included in the local cow testing association at the time of its reorganization in February, 1918.

Possibilities of Cottage Cheese Manufacture by Local Cheese Factories.

The present condition of the cheese market, in comparison with the advance of butter prices, necessitates a study of the possibility of by-product manufacture especially for cheese factories not equipped for butter making. The Harwood Cheese Factory with the assistance of Messrs. Frevert and Turnbow is considering the possibility of skimming their milk and selling sweet cream and cottage cheese.

While in Spokane it was learned that the supply and quantity of the dairy made cottage cheese fluctuates seriously. While there is but little of this cheese on the market there is likewise but small demand for it, as the consumers have not been educated to the food value of cottage cheese and the various ways in which it may be used. The milk produced near Spokane is used almost entirely in the city milk trade and considerable milk is imported to supply the demand, it would appear therefore that Spokane should offer an outlet for Yakima milk and milk products. Spokane dairymen are receiving \$3.13 per hundred for four per cent milk. Very few Yakima farmers are receiving over \$2.20 per hundred for milk and practically none are receiving over \$2.60.

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Field Notes.

Tieton (continued).

Spokane retailers have usually paid 10 to 12 cents per pound for cottage cheese and have sold it for from 15 to 25 cents per pound. Since cottage cheese must be shipped by express from Yakima to Spokane and preferably in bulk, it was decided to arrange with some one in Spokane to make daily deliveries in five to fifteen pound lots to retailers, markets and restaurants. A commission firm was found who would undertake to develop this trade on the commission basis for two cents per pound for the first lots, the commission rate to be reduced if the trade developed satisfactorily. It was found that the retailers were unwilling to pay more than 10 cents per pound and the express rate would be about one and two-tenths cents per pound. The gross price for cottage cheese at the factory therefore would be six and eight-tenths cents per pound, which in terms of skimmed milk would be 95 cents per hundred pounds. Sweet cream prices range from 60 to 67 cents per pound for butter fat, and the Harwood milk is now averaging a little better than four per cent fat. It appears possible, therefore, if the marketing end could be developed, for a factory to realize \$3.25 per hundred or better for its milk by selling sweet cream and cottage cheese.

At present, the milk is yielding about eleven and one-half pounds of cheddar cheese per hundred pounds of milk and this cheese is bringing the factory 23 cents per pound, or a gross rate of \$2.65 per cwt. of milk, which is comparable to the \$3.25 estimated above. The greater cost of making cheddar cheese, the butter fat saved by skimming the milk and the quicker cash returns from sweet cream and cottage cheese are items which emphasize the advisability of fully investigating the manufacturing and marketing of sweet cream and by-products.

Minidoka.

The week ending January 19 was spent in conference with the members of the National Live Stock Association and the National Wool Growers' Association, the live stock specialists of the Western Agricultural Colleges and the packers and stockyards men from the Northwest. Approximately 250 stockmen from Idaho, of which number 32 were from the Minidoka Project, attended a part or all of the conferences.

The problem of handling the hogs in Utah and Southern Idaho was the subject of a number of conferences. In the past, wheat has formed a part of the ration. During the past year, much of the land that had been used to raise feed for hogs was put into wheat. A number who did so planned to finish their hogs on a part of this wheat and sell the rest. Mr. Cotton and Mr. McCarthy of the Food Administration informed the committee that under no circumstances was wheat to be fed, advising that the hogs be sacrificed rather than fed on wheat. This means that during the coming year the land that is to be used to raise

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

feed for hogs must come from the acreages devoted to the production of hay and potatoes, of which there is a large surplus locally.

The reported increase in the number of cattle in the United States caused some surprise among the cattlemen. The prevalent opinion was that the increased numbers reported did not represent an actual increase so much as more accurate counting methods that are now used. Some stockmen reported that their actual numbers are now reported instead of estimates as formerly.

The lamb and cattle feeders are much alarmed over present prices compared with the price paid for feeders. There is no doubt but the feeders were put in at too high prices and the buyers are facing a serious loss. Many lambs in the feed lots are now ready for market but are held back because of the certainty of heavy losses if sold at present prices. The falling off in the consumption of mutton caused much concern and the Food Administrator was asked to aid in a campaign to make the use of mutton more general. It was also asked that two porkless days instead of one meatless day be inaugurated in the range states.

The most important agreement reached by the sheepmen was not to contract their wool in advance of shearing. Last year Idaho sheepmen sold their wool of the same classification at from 32 to 58 cents, the price depending upon the time it was contracted. In a number of instances the speculator sold the purchased clips at 100 per cent advance over the purchase price. Practically all the local sheepmen sold their 1917 clip at 50 cents or less.

No buyers of the 1918 clip of wool have yet appeared nor have any lambs or ewes been contracted for fall delivery.

WESTERN IRRIGATION AGRICULTURE.
FIELD NOTES.

San Antonio.

During the two weeks ending January 26, the maximum temperature was 86, minimum 13, and greatest daily range 45. There has been no precipitation. The effect of the low temperatures the first part of the month are beginning to be apparent. Considerable damage was done to practically all the palms, and particularly to the ones set out the past season. Citrus was killed back, and even Ligustrum Japonica shows the effects of the cold by the leaves drying up somewhat and in some cases falling. Winter oats have been injured severely by the drought and the low temperatures. On some plats, many of the plants appear to be killed out entirely. Field peas have practically all been killed, and had made very little growth before freezing.

No field work was done during the period. Most of the time was spent in filling in the old pond. Some time was spent in repairing fences, buildings, and equipment.

Yuma.

During the week ending January 26, the maximum temperature was 71, minimum 30, and greatest daily range 39. A rain of one inch occurred on Friday night and Saturday, which is the largest rain experienced in this region for several months. Rains have also been general through the coast country of Southern California, which will now permit the planting of winter barley in that region.

All cotton picking on the station was completed this week, with the exception of breeding blocks of Durango. Threshing of forage sorghum seed was also completed.

Gravel was hauled and work begun on the construction of a garage and machinery building. This building will be of corrugated galvanized steel with cement floor, having a floor space of twenty by forty-eight feet.

Truckee-Carson.

Mr. Headley reports as follows for the four weeks ending January 26:

Gypsum was applied by means of the manure spreader to 16 plats in fields C, E and H, at rates varying from 1090 to 2670 pounds per acre. Manure was applied to 3 of the plats in field H at the rate of 7 tons per acre.

Some of the fields are too dry to plow or level, the season having been the driest so far recorded at this station. The total precipitation since June 1, 1917 is .65 inch, an average of .08 inch per month for 8 months.

The feeding of six Duroc-Berkshire pigs was continued in the same manner as reported during the last period. The daily ration remained

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Truckee-Carson (continued).

the same from December 15 to January 30, namely, 30 pounds barley and 3 pounds tankage. The percentage of grain fed to live weight has therefore been steadily decreasing. With the decrease in percentage of grain fed the results show: (1) a decrease in the pounds daily gain per pig; (2) a decrease in the percent daily gain; and, (3) an increase in the amount of grain required to produce a pound of gain. During the first period the ration fed was 9.3% of the initial weight, and the gains during this period were economically made. During the second period, the cost of feed was slightly less than the value of gain, but during the third period, when the grain ration was about 6% of the initial weight, the value of the increase in weight was about equal to the cost of feed. It seems from these results that to have economical gains, a 9% grain ration must be fed, or it may be, that the cost of production is increasing with the age of the pigs.

In order to throw some light on this question, the present ration of 33 pounds per day will be continued until February 6, when the pigs will be changed to a full ration in the self-feeder.

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FIELD NOTES.

Uncompahgre.

The greater part of the week ending January 12 was spent at the office due to the heavy snows.

Two hog feeding tests were completed during the week and four calves were vaccinated for blackleg, and one dairy herd was tested for butterfat.

The Montrose Cattlemen's Association held their annual meeting during the week. The meeting was preceded by a banquet at which six hundred people were fed. The program was devoted to Red Cross work, and one of the cattlemen, Adam Thomas, donated a spring calf which was sold at the banquet for \$1,316.50. The calf was given to one of the boys in the army after the sale. The money was raised by donations from the members of the association.

The business meeting of the association was well attended and a part was taken in the meeting for the purpose of letting the hogmen join the association. The object of this was to provide for organization work in way of shipping and disease.

The greater part of the week ending January 19 was spent at Fort Collins at the Colorado Agricultural College attending the Farmers' Congress.

Conferences were held with Professor Morton of the Animal Husbandry Department, Dr's. Glover, Neusom and Wright, regarding hog and cattle diseases.

One day was spent in a trip over the country with Mr. Loesch; one of the project farmers, and County Agents Nevius and Divilbiss for the purpose of looking into the cattle and sheep feeding in the locality around Fort Collins.

Beet pulp is being utilized in this section by both the sheep and cattle feeders. On nearly all of the farms visited, feeders expressed the opinion that the lambs did not utilize the beet pulp to so good an advantage as did the older sheep. Mr. Evans, one of the larger feeders in that section, is feeding several thousand sheep and about 1000 head of cattle. An alfalfa mill was used on this farm in which the hay was ground and mixed with low grade molasses and cotton seed cake. Straw was also used, ground, for one feed a day. There was practically no waste where this system was used. The ration used for the steers was: hay, 20 lbs.; syrup, 7 lbs.; straw, 7 lbs.; and, cotton seed cake, 5 lbs.

No pulp was given to this lot. Syrup is sold by the factory this season for \$25.00 per ton.

Experiments at the Agricultural College at Fort Collins place the feeding value of molasses at three-fourths that of corn for feeding to cattle.

Saturday was spent at Denver at the opening of the stock show.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Uncompahgre (continued).

The entire week ending January 26 was spent at the National Western Live Stock Show at Denver, conferring with stockmen present, and assisting in the selection of stock for project farmers.

Two carloads of registered Shorthorn and Hereford bulls were purchased by project farmers. They were well distributed over the project. One carload of high grade Shorthorn heifers were purchased by a new breeder.

The show was exceptionally strong in most of the departments. There were 408 entries of Shorthorns, 340 Herefords, 100 Angus, and 50 Galloways.

The showing of hogs was better than the two previous years. There were more Duroc-Jerseys than any other breed represented. Poland Chinas, Berkshires, and Hampshires were represented by small numbers. The quality of the animals shown was very good.

There were 125 head of Holsteins, 50 Jerseys, 20 Guernseys, and 25 Milking Shorthorns in the dairy cattle section. These were all shown by Colorado breeders. The showing of carlot stuff at the yards was stronger than last year. Many feeder steers sold at \$10.25 to \$11.00 in the feeder sale. The hog market was around 16 cents.

One feature of the show this year was the display of sheep which were housed in the new sheep barns at the yards. Some very good exhibits of fat ewes and lambs were shown.

The demand for bulls for the range was strong and 200 head were brought to the Western slope of Colorado.

Truckee-Carson.

For the week ending January 26, Mr. Cline reports as follows:

On January 2, a cooperative shipment of one car of fat cattle was marketed under the supervision of this office. The shipment consisted of fat steers, cows and heifers and was sold to the Western Meat Company, at San Francisco. The prices received for the stock in San Francisco were $9\frac{1}{2}$ cents for steers, 8 cents for good cows, $7\frac{1}{2}$ cents for fair cows and heifers. The shrinkage in transit was about $8\frac{1}{2}$ and the transportation cost was 64 cents per hundred pounds, including freight, feed, and expenses of care taker. This made the marketing expense for selling good cows \$1.28 and steers \$1.40 per hundred, including shrinkage. Because of the fact that this shipment was classed as dairy stock, this brought $1\frac{1}{2}$ cent per pound less than range stock and were subject to Federal Government inspection. There were no deductions made in final settlement for loss on account of inspection. The animals in this shipment were marked with Roman numerals cut in the hair on the hips by means of curved scissors. This served as an easy mark for identification at the selling point.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Truckee-Carson (continued).

On January 21, a cooperative shipment of one carload of hogs was sent out under the supervision of this office. Fourteen farmers took part in the shipment. Their consignments ranged from one to eighteen hogs. The hogs were marketed in Reno. The prices received were 14-3/4 cents for hogs weighing 175 to 300 pounds, 14-1/2 cents for hogs weighing 140 to 175 pounds, and 14 cents for hogs weighing under 140 pounds. The shipping expense including shrinkage amounted to 75 cents to 80 cents per hundred. Since the Nevada Packing Company at Reno, to whom this shipment of hogs was sent, is a branch of Swift and Company, the same as the Western Meat Company at San Francisco, the former firm pays 50 cents per hundred less than San Francisco prices, which is the equivalent to the increased shipping expense necessary to get onto the San Francisco market.

Additional shipments of cattle and hogs are contemplated for the near future.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Truckee-Carson.

The following notes have been compiled from Mr. Cline's annual report for 1917:

General agricultural development.--The year 1917 was the most prosperous year in the history of the Truckee-Carson project and it witnessed the greatest development of agriculture. Generally speaking, the climatic conditions were favorable to crop growth. The precipitation, which amounted to only 2.7 inches during the entire year, was the lowest on record. The autumn and early winter were characterized by mild weather which was very favorable to the marketing of the large crop of alfalfa hay and to new land preparation. The reopening of the beet sugar factory called for much extra labor in the care of the beet crop, which covered about 3,000 acres. The shortage of labor for hand work with this crop resulted in the abandonment of some acreage, so that only about 12,000 tons of beets were delivered to the factory. An interesting development of the year was the introduction of a large number of traction plowing and leveling outfits, which were kept busy preparing new land. Prices during the year were high for all kinds of farm crops and this fact hindered to some extent the development of live stock industries, as many farmers have marketed their feed products who, under normal conditions, would have fed them to live stock. This has been particularly true with the swine industry, the development of which has been materially retarded by the high prices for grain.

The dairy industry.--The dairy industry made its chief progress during the year in the direction of quality. The cow population decreased somewhat, as did the percentage of farmers keeping cows. Some interesting facts with reference to the number of dairy farmers and to the cow population during 1915, 1916, and 1917 are shown below:

	1915	1916	1917
Total number of white settlers,	502	516	554
Total number of dairy cattle,	2579	2537	2020
Total number white farmers having dairy cows,	413	350	364
Percent white farmers having dairy cows,	82.2	67.8	65.7
No. of farmers having only 1 dairy cow,	67	90	103
Percent farmers having 1 cow,	13.3	17.3	18.5
" " " 1 to 10 cows,	51.9	33.9	33.5
" " " 10 to 20 " 	10.3	11.6	9.5
" " " 21 to 30 " 	4.9	2.5	2.8
" " " more than 30 cows,	1.5	2.5	1.08

Feeding practices did not change materially during the year, exclusive feeding of alfalfa hay still being the predominant practice. Some interest, however, is developing in silos, and some silage is

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

now being fed on the project. The equipment used in dairying improved materially. Twenty-seven new cow barns were built during the year. The production of butter-fat probably decreased slightly as compared with 1916, but because of the difference in marketing methods in the two years direct comparisons are not possible. Prior to 1917, the entire butter-fat output of the project was marketed at the local creamery, but in 1917 three outside markets were also patronized. Complete data regarding the purchases of these markets are not available. The following table, which covers the purchases of the local creamery only during the past three years, contains information regarding the butter-fat purchased, average prices and the total amounts paid:

	1915	1916	1917
Butter-fat purchased, pounds,.....	279,000	351,000	272,000
Lowest average monthly price for butter-fat, cents,	23.05	25.05	35.84
Highest average monthly price for butter-fat, cents,.....	30.2	34.9	49.2
Average annual price for butter-fat,¢	26.8	29.32	41.29
Total value of butter-fat purchased,.	\$75,000	\$102,000	\$110,000

The situation with reference to diseases and minor ailments of dairy cattle changed during the year chiefly in connection with contagious abortion and tuberculosis. The prevalence of abortion was reduced materially and very few cows were found reacting to tuberculosis tests, most of the reactors having been eliminated as a result of the educational campaign conducted in 1915 and 1916.

A very important work in connection with the dairy industry during the year had to do with the local cow-testing association, which was organized in November, 1916. This association contained 580 cows with an average butter-fat production of 209 pounds per cow and an average butter-fat test of 4.02 per cent. The association contained one cow which produced more than 500 pounds of fat in the first year; 13 which produced between 400 and 500 pounds, and 72 which produced between 300 and 400 pounds. The five highest producing herds had an average production per cow ranging from 270 to 377 pounds. The following table gives an indication of the improvement in the production of the cows in the association during the year:

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Field Notes.

Average monthly butter-fat production per cow.	Per cent of herds	
	Nov. 1916	Oct. 1917
More than 50 pounds,.....	1.56	4.46
40 to 50 pounds,.....	2.74	5.88
30 to 40 pounds,.....	13.10	22.02
20 to 30 pounds,.....	28.30	34.84
15 to 20 pounds,.....	23.60	23.85
Less than 15 pounds,.....	30.30	8.99

It will be noted that the percentage of high producing cows increased and that of low producing cows decreased. This was due chiefly to the elimination of inferior cows and to better management and feeding methods.

In view of the conditions with reference to prospective prices for farm crops, it is probable that the dairy industry will not increase materially during the next year. There are, however, a considerable number of well-established dairymen with good herds who will continue in the business regardless of the prices of farm crops. These efficient dairymen will serve as a nucleus for a greater development should there be a reaction in the prices which farm crops will command.

The swine industry.--During the year 1917, the swine industry declined materially, largely as a result of the high prices for grain in the fall of 1916 and the prospects at that time for continued high prices. The following table gives information on the status of the swine industry on the project for the years 1915, 1916, and 1917:

	1915	1916	1917
Total number of white settlers,	502	516	554
Total number of hogs,	4515	6092	3117
Total number white settlers owning hogs,.....	268	270	287
Percent of white settlers owning hogs,.....	53.5	52.5	51.8
" " " " " less than 10,	52.0	56.0	38.9
" " " " " 10 to 20 hogs,	28.2	21.4	8.3
" " " " " 21 to 30 "	8.17	8.48	1.4
" " " " " more than 30,	11.5	12.54	3.06

Some interest was shown in improving the methods of feeding hogs for market, due largely to the increased cost of feeds. Some cooperative feeding tests in this connection also stimulated considerable interest. The use of tankage as a supplement to grain has been adopted by a large number of the hog growers as a result of the cooperative feeding tests conducted during the year. Practically all the hogs shipped out were marketed cooperatively. There

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

was a total of seven carloads marketed in this way. This was less than half the number of cooperative carload shipments made in 1916. No cases of cholera were reported. There were some cases of impaction in hogs on alfalfa hay and there were a few calls for assistance in connection with treatments for worms and lice. Quinsy and pneumonia caused some losses. The extent of the swine industry in 1918 will depend largely upon the developments of the dairy industry, as, under existing conditions, the number of hogs kept depends chiefly upon the availability of by-products of the dairy industry.

Sheep production.--Sheep raising on the project attracts comparatively little attention. Winter feeding for range sheepmen, however, is very important. The conditions of high feed prices, together with the fact that practically no summer pastures for sheep are available, have contributed to the slow development of sheep production on farms. During the year one herd of pure bred Hampshires was imported from Utah, and a herd of pure bred Shropshires was imported from California. The total sheep population on project farms at the close of 1917 was 3,346, as compared with 5,452 in 1916. These figures do not include a large number of sheep brought to the project for winter feeding.

The following table shows the percentage of farmers on the project owning sheep in various sized herds:

Percent of farmers having less than 10 sheep,.....	8.1
" " " " 10 to 20 sheep,.....	2.2
" " " " 21 to 30 "	2.02
" " " " 31 to 50 "	1.8
" " " " more than 50 sheep,.....	2.3

The turkey industry.--The census reports obtained from the Reclamation Service indicate a decided falling-off in the growing of turkeys. In this instance, however, the census figures may be somewhat misleading. In the spring of 1917, there was a much increased interest in turkey growing and a big turkey crop for the holiday markets was promised. The increasing uncertainty of feed prices as the season advanced caused the selling of large numbers of poults. The presence of the blackhead disease on the project also resulted in the marketing of many turkeys prior to the time the census was taken. The losses from blackhead during the year were very heavy, some entire flocks of considerable size having been lost from this disease. The outbreak occurred in the largest turkey growing section of the project. Little effort was made in the beginning to combat the disease on account of the suddenness of the attack and the lack of definite information as to treatment. The prices obtained for turkeys ruled about 5 cents per pound higher than those secured in 1916. The prospects for a large turkey crop in 1918 are not particularly good because of the prevalent fear of blackhead.

DEMONSTRATIONS ON RECLAMATION PROJECTS
Field Notes.

The following table gives a numerical summary of the turkey population on the project during the past three years:

	1915	1916	1917
No. of farmers growing turkeys,.....	197	238	221
Per cent of farmers growing turkeys,.	39.3	46.1	40.7
Number of turkeys,.....	9,000	15,239	9,030

The work of this office in connection with the turkey industry was confined chiefly to the control of diseases and to marketing, but in addition to this a turkey growing experiment was conducted at the experiment farm by this office in cooperation with the Bureau of Animal Industry and some useful information was secured as to the gains made by turkeys under three different methods of feeding.

Miscellaneous.--During the year, a total of 1,403 calls for information and assistance were answered; 505 office visits were received; 439 farm visits were made; and 21 newspaper articles or circular letters were issued. Consultations, visits, and answers to calls were had or made in about 1,800 instances, distributed approximately as follows: Regarding the control of diseases, pests, and minor ailments of live stock, 1,042; securing stock, 87; stock management, 181; feeding, 106; cow-testing, 98, manufacture and marketing, 274; and equipment, 30.

As heretofore, the work was carried on in cooperation with the state university and various Departmental agencies.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending February 2, the maximum temperature was 83, minimum 24, and greatest daily range 49. The total precipitation was .03 inch, which came mostly as a mist. Freezing weather prevailed throughout the time the rain was falling, which froze the rain as it fell. This weather was very severe on range stock, much of which is thin and poorly fed.

Practically all labor was used throughout the week at filling in and grading around the old pond.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
FIELD NOTES.The Usefulness of Field Peas in Swine Production.

That field peas have a high value in swine production on irrigated land has been recognized for several years by a limited number of swine growers. In certain sections, particularly in Colorado, field peas for years have occupied an important place in swine production enterprises. But on the irrigated lands generally, the usefulness of the crop in this connection is not fully appreciated.

Now that the use of wheat as a hog feed is not a desirable practice, the problem of finishing hogs for market has become acute on those irrigation projects where wheat has been widely used for this purpose. In this connection, some suggestions recently made by Mr. Rinehart are of interest. These suggestions have been made tentatively, but it is believed that they embody general principles which may safely be followed by a large number of our irrigation farmers. Mr. Rinehart, in a recent letter, suggests that we might work to increase the production of swine "by trying to have each farmer keep from 2 to 5 sows, the number being dependent upon the size of the farming system followed. The sows can easily be wintered on skim milk, slops, alfalfa hay, beets, cull potatoes, and such grains as barley, smutty wheat, or mill feeds. During the summer, the sows and pigs can be pastured on alfalfa and fed a small grain ration consisting entirely of the by-products of the mills. There are two lines that the swine grower can then follow, or, for some localities, three, as follows: (a) Pigs not required to clean up the waste on the farm to be sold as stock hogs; (b) sufficient pasture in the harvested grain fields to be rented from dry-farmers and other grain farmers to put the shotes in market condition; (c) a sufficient acreage of field peas to be sown to finish the number of pigs raised.

"While each of the three methods would have some merits, according to circumstances, the third is the best proposition for our locality. The field pea should come out of the acreage given to alfalfa or potatoes, or some similar crop that is producing a surplus on the farm which is hard to market. By following the industry in this way, the labor problem will be partly solved, for the part of the alfalfa field that is pastured will not involve the labor of making hay; while with peas, instead of more potatoes, than can be handled, the labor issue is again eliminated."

We are fortunate in having some useful data bearing on the question of using field peas as suggested by Mr. Rinehart. These data have been obtained by our fieldmen in cooperation with swine growers on several of the Reclamation projects during the past three years. Certain of the data secured in 12 of these cooperative tests are presented in the table shown on the following page.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

The Usefulness of Field Peas in Swine Production (continued).

Project	Crop	No. of pigs	Average initial wt. lbs	Acres hogged	Date begun	Days	Gain pounds	
							Per acre	Per pig per day
Tieton,.....	Peas,.....	67	45	2.2	Sept2	32	672	0.69
Boise,.....	Peas*,.....	28	75	1.0	July8	25	425	0.61
Minidoka,.....	Peas*,.....	97	71	4.6	Sept8	37	843	1.08
Minidoka,.....	Peas,.....	39	113	3.4	Sept6	55	949	1.50
Minidoka,.....	Peas,.....	38	94	3.63	Sept5	68	808	1.13
Boise,.....	Peas-wheat*,..	28	91	1.0	Aug.2	25	746	1.06
Boise,.....	Peas-wheat*,..	33	86	1.0	Sept11	17	447	0.80
Boise,.....	Peas-wheat,..	188	32	5.2	Jul24	36	915	0.96
Boise,.....	Peas-wheat,..	128	68	9.0	Aug.1	41	515	0.90
Truckee-Carson,.	Peas-wheat,..	34	63	1.25	Sept7	21	760	1.40
Boise,.....	Peas-barley,..	20	118	1.00	Jul24	43	650	0.75
Tieton,.....	Peas-barley,..	60	54	3.10	Aug.7	40	716	0.92
Average (12 tests; 710 pigs; 36.4 acres).....							704	

*The hogs in this test had access to alfalfa pasture.

As shown in the above table, these 12 tests involved 710 pigs and 36.4 acres of peas, or peas mixed with grains. The gains made by the 12 lots of pigs ranged from 425 to 949 pounds per acre, the average being 704 pounds per acre. There is no indication that access to alfalfa pasture increased the gains nor that better results were obtained from peas and wheat than from peas and barley, or peas alone. The tests were not conducted in such a way as to determine these points. It is probable that a small quantity of grain might well be planted with the peas so as to reduce lodging as well as to add variety to the feed. If barley is used, a beardless variety is usually preferred, as difficulties frequently result from hogging bearded varieties. The gains per acre will, of course, vary with the character of the pigs and the size of the crop.

The table shows that the time of turning the pigs into the peas in these tests ranged from July 8 to September 11. Most of the hogging was done in August and September. The duration of the hogging period ranged from 17 to 68 days.

The varieties of field peas with which satisfactory results have been obtained include "Canada Field", "White Canadian", "Marrowfat", "Bangalia", "Admiral" and "Ameer", these variety names being reported by the farmers on whose farms the tests were conducted. The rates of seeding have been variable. Usually from 90 to 150 pounds of peas per acre have been seeded, and where grains have been used with the peas, the rate of seeding them usually has been about half that of the peas.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

The Usefulness of Field Peas in Swine Production (continued).

It is suggested that the field men give this matter their early attention, and endeavor to interest swine growers in the possibilities of using field peas in their swine production operations. Assistance probably can be secured for the farmers from cooperating agencies, particularly county agents, in connection with the problems of growing the crop. Prompt action is desirable, as peas usually must be seeded very early if the best results are to be secured.---F. D. F.

Boise.

The Boise project applicants for sheep grazing permits on the Payette National Forest sent a representation to Emmett during the week ending February 2 to confer with the Forest Supervisor and attend the annual meeting of the Payette Wool Growers' Association. They were informed that they would be given permits for two bands this year. They met on Saturday to form their own organization and discuss the employment of herders. Only one of them has run sheep on the national forests.

Uncompahgre.

The greater part of the week ending February 2 was spent at the office with reports. Five office conferences were held and calls for assistance and information were received from 10 sources.

One afternoon was spent with the County Agent of Montrose County in assisting with the plans for a farm bureau organization. One forenoon was spent in arranging a schedule for the six one day meetings at the various community centers on the project. These institutes are being planned in cooperation with the County Agent. The College at Fort Collins will send four speakers to assist with these meetings.

Up to date, 33 inches of snow has fallen in the valley. This has caused the sheep and cattle owners to start heavy hay feeding.

Considerable difficulty is being had to find sufficient grain for hog feeding. Wheat is the only grain available. Some corn has been brought in but the price is too high to make it practical to feed this grain.

The Montrose Creamery is paying 50 cents for butter fat. This plant made 10,148 pounds of butter in January.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

On Tuesday of the week ending February 9, the Water Users meeting was held at Olathe. The Water Users voted to have the Reclamation Service continue the operation of the project for the next year at least and probably five years. An attempt will be made to have the opening of the project postponed for five years.

A meeting of the Montrose Grange was attended during the week and a talk given on the Farmers Congress program given at Fort Collins.

One day was spent with the County Agent assisting with the work of advertising the Farmers' Institute.

A meeting of farmers was held at the office for the purpose of forming a bull association block east of Montrose. There were but four farmers at this meeting but 22 cows were signed for the association. The work of canvassing further for this block will be taken up by those interested.

On Saturday, a trip was taken to Lamar to look into the beet top feeding in that locality.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Uncompahgre.

Live Stock Developments in 1917.

General agricultural conditions.--Agricultural conditions generally were very favorable on the Uncompahgre Reclamation Project in 1917. Favorable weather and an adequate water supply contributed greatly to satisfactory crop production. One of the best hay crops ever produced on the project was secured. An unusually large crop of potatoes was planted and the yields generally were good, although there were some difficulties with diseases. Fairly satisfactory crops were secured with sugar beets, which occupied 1,310 acres. An unusually large acreage of beans was planted. Grain crops produced normal yields. The demand for silage for cattle feeding resulted in an increased acreage of corn, of which about 625 acres was used for silage, producing an average of 8.2 tons per acre. The fruit crop was heavy but rather late and was damaged severely by frosts in October.

The dairy industry.--The dairy industry increased slightly over 1916, and interest in the industry remained good. There was a continuing demand for pure bred bulls and some demand for pure bred heifers. While a number of dairymen disposed of their herds, this was chiefly in the nature of transfers, as practically all the herds still remain on the project. Many poor cows were discarded and replaced with better ones. At the close of the year, there were on the project 3,148 dairy cows, as compared with 3,025 in 1916, and 2,317 in 1915. The number of farms carrying dairy stock and the number of herds of different sizes in 1916 and 1917 are shown below:

Items.	1916	1917
Number of dairy cows,.....	3,025	3,148
Number of farms carrying cows,.....	513	728
Average number of cows per farm,.....	5.8	4.3
Number of farms carrying 1 to 3 cows each,.....	369	475
" " " " 4 to 10 " " 	92	197
" " " " 11 to 20 " " 	38	44
" " " " more than 20 cows each,.	14	12

It will be noted that the increase in the number of herds involved herds of small size, particularly those containing 3 or fewer cows. A total of 136 head of dairy stock were imported to the project during the year, including 21 head of purebred Holsteins and one purebred Guernsey, which were brought in from Wisconsin. There are at present purebred dairy bulls on the project, as follows: Holsteins, 30; Guernseys, 3; and Jerseys, 6. There are also 50 purebred Holstein females and 2 purebred Guernsey females. There is a healthy interest in securing better stock. In connection with feeds and feeding, it is interesting to note

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Uncompahgre (continued).

Live Stock Developments in 1917 (continued).

that the area in pastures increased from 1,936 acres to 2,240 acres. This, together with an addition of 29 new silos during the year, has done much to improve feeding practices and productive efficiency. No serious difficulty was encountered with diseases among dairy cattle, although there were a few losses resulting from poison milkweed.

Most of the milk and cream produced on the project is marketed at the creamery at Montrose or the cheese factory at Delta. The former produced about 70,000 pounds of butter in 1917, as compared with 75,000 pounds in 1916. The decrease was due partly to the facts that some milk was sold to the cheese factory at Delta and that much cream was used by the ice cream plant at Montrose. The cost of producing milk, as indicated by the systematic testing which was carried on in 20 herds, increased materially during the year. The cost of producing a pound of butter fat in 1917 ranged from 22 to about 30 cents, and the cost of producing 100 pounds of milk was in the neighborhood of \$1.00 or \$1.25. These costs are about 7 cents higher per pound of butter fat and 40 to 60 cents higher per 100 pounds of milk than the corresponding figures for 1916. The prices in cents per pound for milk delivered to the cheese factory, and for cream delivered at the creamery, are indicated below:

Month	Cheese factory	Creamery
January,.....	45	33
February,.....	40	33
March,.....	40	35
April,.....	43	38
May,.....	43	40
June,.....	45	38
July,.....	40	33
August,.....	46	38
September,.....	50	45
October,.....	50	45
November,.....	50	45
December,.....	56 to 60	50

The marketing of finished products from the creamery and cheese factory was entirely satisfactory from every standpoint. The butter was marketed chiefly in the mining towns in the adjacent territory and the cheese output was handled largely through wholesale houses.

An important feature of future development is the probability of organizing a bull association during the present year. On the whole, the future of the dairy industry on the project is promising. More

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Uncompahgre (continued).

Live Stock Developments in 1917 (continued).

farmers are realizing the need of a few cows and are coming to combine their dairy activities with swine production advantageously.

Swine production.--The swine industry on the project was not as popular in 1917 as it was in 1916, due chiefly to the early uncertainty of hog prices and high prices for grain. The planting of a large acreage of potatoes last spring probably reduced the local grain production, and this, together with the difficulties of importing corn, were serious obstacles in finishing hogs for market. The swine population on hand at the close of 1917 was 9,948, as compared with 13,729 head at the corresponding period in 1916. The number of farmers growing hogs in 1916 and 1917, together with the number of herds of different sizes, are indicated in the following table:

Items.	1916	1917
Number of hogs on hand at close of year,....	13,729	9,948
Number of farms carrying hogs,.....	696	706
" " " " 1 to 10 hogs each,.	401	472
" " " " 11 to 20 " "	111	112
" " " " 21 to 50 " "	122	93
" " " " 51 to 100 " "	44	19
" " " " more than 100 hogs,.	18	10

It will be noted that the total number of farms carrying hogs increased but slightly and that there was a marked tendency to decrease the size of the herds. It is being found generally that swine production is safest when prosecuted on the basis of small herds with a resulting high utilization of waste materials and by-products.

The subject of feeds and feeding has been discussed more than any other subject in connection with the swine industry during the year. In this connection, 7 feeding tests were conducted and they furnished information which has been very useful in assisting swine growers. There was much increased activity in the utilization of cull potatoes and frozen apples, both of which have been used to advantage. Aside from some losses from rheumatism and from necrobacillosis, no serious disease difficulties occurred. The cost of producing pork, as ascertained in various tests, ranged from about $7\frac{1}{2}$ cents a pound, where the pork was produced on alfalfa pasture, to 15 cents a pound in dry lot feeding. The hogs have been marketed chiefly at Denver and Ogden, Utah. Practically all the marketing has been done cooperatively. The carload shipments of hogs from the project in 1916 and 1917, and the average prices received in 1917, are indicated by months in the table shown on the following page.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Uncompahgre (continued).

Live Stock Developments in 1917 (continued).

Month	Average price 1917, cents per pound.	Cars Marketed	
		1917	1916
January,.....	10	20	9
February,.....	12	15	10
March,.....	13 $\frac{1}{2}$	17	18
April,.....	16	20	6
May,.....	16	12	10
June,.....	14 $\frac{1}{2}$	5	11
July,.....	14 $\frac{1}{2}$	00	7
August,.....	18	3	4
September,.....	18 $\frac{1}{2}$	10	12
October,.....	16 $\frac{1}{2}$	--	--
November,.....	16	20	16
December,.....	16	17	18
Total,.....		139	122

The raising of hogs probably will increase mainly with the increased dairy activities which will produce additional quantities of by-products and waste material which can be utilized by hogs.

The sheep industry.--Much interest developed in farm sheep production during the year and a number of herds were bought at high prices. The number of sheep owned by project farmers increased from 30,265 in 1916 to 34,000 in 1917. Most of these sheep are owned in bands of 1,000 or more each, but there were at the close of 1916, 59 farmers carrying flocks containing less than 10 head each. The principal breeds are the Rambouillet, Cotswold, Lincoln, and Hampshire. One herd of 450 pure bred Cotswold ewes were brought to the project from Utah, and 30 pure bred Rambouillet rams were imported from the same state. Many Hampshire rams are used, particularly in farm breeding. The quality of the sheep is being rapidly improved through the use of good sires. In summer feeding, irrigation pastures are coming to be widely used. Winter feeding involves hay and beet tops chiefly. A few sheep have been fed for market during the past year, chiefly on silage and alfalfa hay. Most of the lambs marketed are shipped to Kansas City and sold as feeders as soon as they are brought in from the range. A total of 346 carloads of sheep and lambs were shipped from project points during the year. The wool produced is sold to local buyers. During the past year, wool prices received by local producers ranged from 40 to 50 cents a pound. Sheep raising can be carried on in a small way on a large number of project farms where small irrigated pastures can be grown, and it appears that, as the available range already is fully occupied,

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Uncompahgre (continued).

Live Stock Developments in 1917 (continued).

further increases in the sheep industry must be obtained through increased farm production.

The beef industry.--The beef industry changed very little during the year. In the spring there were some losses due to late cold storms after the cattle had been turned onto the range. Many of the farmers at the close of the season were inclined to dispose of their cattle when hay prices threatened to be high, but good fall weather without snow made late grazing possible and prevented excessive fall marketing. At the close of the year there were on the project 8,700 head of beef cattle, as compared with 7,515 a year ago. Shorthorns and Herefords are the principal breeds. Interest is gradually developing in pure bred bulls and the importation of several carloads of such animals is planned. The principal losses of beef cattle from diseases during the year were from blackleg, but serious damage was prevented through rather extensive use of blackleg vaccine. A total of 540 carloads of beef cattle were shipped from project points during the year. The beef industry promises to continue to be important on the project for an indefinite period, chiefly because it facilitates the utilization of the adjacent range lands and furnishes an output for the surplus hay produced on the project. The development of the industry requires chiefly better breeding methods and better transportation to the markets.

Miscellaneous.--During the year a total of 444 calls for information and suggestions were received and 526 farm visits were made. Fifteen meetings were held, and 16 lectures were delivered. The total attendance at farmers' meetings was 750.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

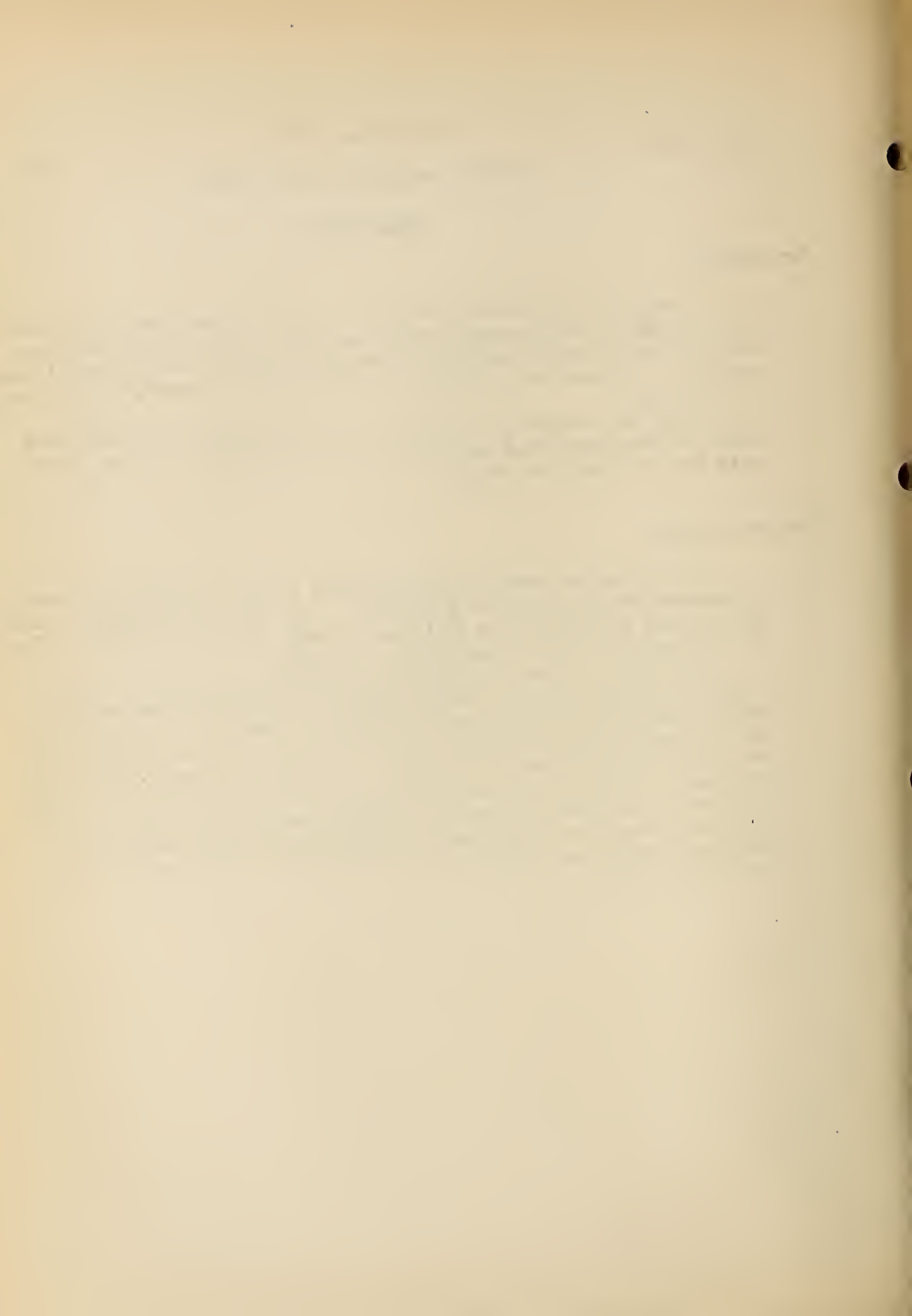
During the week ending February 9, the maximum temperature was 79, minimum 24, and greatest daily range 60. Nearly half an inch of rain fell Saturday in gentle showers so that its full benefit was secured. It was preceded by a norther but the temperature did not go below 43.

Labor was employed at odd jobs and in filling in the old pond, which job was completed except for some leveling to be done after rain has softened the ground.

Truckee-Carson.

During the two weeks ending February 9, dead and badly diseased trees were removed from the orchards. The cows were changed from an all alfalfa to alfalfa and beet pulp silage ration on the 5th. They did not begin to eat it readily until the 9th.

The ration of the six hogs was continued as reported for the period ending January 26, until February 4, when they were weighed and changed from trough feeding to the self-feeder. During the 5 days of hand feeding the daily gain per pig was .7 pound, while with the self-feeder, it was 1.1 pound. The feed required per pound of gain was 8.25 pounds by hand feeding and 6.3 pounds by self-feeding. With neither of the methods are the gains satisfactory during these periods. Much more satisfactory gains were obtained during all previous periods, as indicated in the report for the period ending January 26, 1918.



DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

North Platte.

Two days of the week ending February 9 were spent at the Farmers' Institute held at Morrill under the direction of the State Extension Department. There were two lady speakers and two men speakers at these meetings. The women's meetings were well attended but there was only a small attendance at the men's meetings. The speakers at the latter talked on the subjects of live stock feeding and management. A large part of the time on the last day of the institute was spent at a meeting of the County Farm Bureau at which time a County Agent was elected.

A large part of the time thus far in the work has been devoted to becoming familiar with the data and office records.

Several farms were visited during the week at the request of the operators to inspect sick hogs. It was found that there was no hog cholera at any of these places. A few farms where other stock is being fed were also visited. A very good class of hogs were found at all of the farms visited but in only one instance was the class of cattle of as good quality as the hogs. Because of the high price of grain most of the farmers having hogs are inclined to be discouraged over the prospects of marketing them.

A large number of sheep are being fed in the district this winter. Quite a large per cent of these sheep were bought last fall at a very high price. Because of this, and the high price of feed, it is doubtful if the sheep will pay a profit. However, some farmers bought their sheep at a reasonable price, from 12 to 14 cents per pound, and are going to make some money.

Practically all of the stock in the parts of the valley visited are wintering in very good shape.

Boise.

The annual meeting of the Boise Valley Cattle Grazing Association was held at Meridian on Saturday of the week ending February 9, at which time, officers were elected and a herder employed. This was the same man who had the cattle out last year, he being the only applicant and having given satisfactory service the past season. His bid for next season was \$2.50 per head for all stuff over six months old, the association members paying for salt, feed to and from the range, and the grazing fee, in addition. This will make the total cost around \$3.50 per head, which includes no insurance against loss. An insurance feature was discussed but was not favored by members of the association.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Boise (continued).

Permits have been granted for 1000 head in the association this year, all permittees from the Valley being required to join the association, except one or two large owners. The attitude of members toward the association seems to be entirely favorable.

A summary of the work of the Boise Valley Cow-Testing Association shows that 304 cows finished the year's test. These had an average butterfat production of 285 pounds, produced at an average cost of 15 cents a pound. The highest producing herd - 7 grade Guernseys - made an average of 383 pounds per cow. The highest individual record was made by a grade Guernsey cow, which produced 531 pounds of butterfat. A total of 19 cows, in 7 herds, averaged over 400 pounds. A total of 9 herds, containing 122 cows, had herd averages above 300 pounds per cow, the averages of the herds ranging from 321 to 383 pounds per cow.

Truckee-Carson.

For the week ending February 9, Mr. Cline reports as follows:

The preserving of sugar beet tops for cattle feeding was carried out in two instances the past season by the Churchill County Creamery farm. The method pursued was much the same as that outlined by Mr. Farrell in the Weekly Bulletin last fall. The beet tops were placed in a pit, well packed, and then covered with straw and dirt. The contents of one pit in which the beet tops had considerable moisture, showed a decided alcoholic fermentation, and the resulting feed had the appearance of being cooked. An occasional beet which was found in the silage was soft. The entire contents was of a dark brown color. The beet silage after standing for about thirty days was fed to beef cattle and was much relished.

A second lot of beet tops were pitted in the same manner about two weeks later. These were allowed to dry somewhat before being placed in the pit. The pit was opened the first week in February, after standing about two months, and the resulting beet silage is being fed to beef steers. The silage coming from the second pit is of a much firmer consistency and has a pleasing odor, resembling that of old sorghum molasses, and has about the same color. From the results obtained, the second method seems to be preferable to the first.

In several instances, dried beet tops were fed throughout the fall to dairy and beef cattle. In some cases, the cattle were allowed to pasture the fields and gather up the tops. This method, however, is considered wasteful in that much of the feed is lost by being covered by blowing sand and by being tramped into the soil by the cattle. The practice of gathering the dried beet tops and shocking them and later feeding them as fodder has been found very

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued).

satisfactory locally. Dairy cattle seem to eat the dried tops handled in this way very readily. The climatic conditions locally are favorable for handling beet tops in this manner.

Shoshone.

During the week ending February 9, returns were received on the cooperative shipment of cattle made January 8th. One calf died, and two cows were crippled enroute. A claim was made for damages on these cattle and for extra cost of feed due to delay. In settling with the men who cooperated in the shipment, the damage to the two cows was charged with the expenses, but the owner of the calf takes his own risk on reimbursement from the railroad, because calves are received for shipment only under these conditions. Counting the damage charged into the expense, the total expense of shipping this car was \$1.13 per cwt. The man who went with the car reported that shipping conditions are almost unbelievably bad, and that the Omaha yards are crowded and sales slow because the packers have been unable to ship out their meat.

A meeting of potato growers was held in this office, about 30 being present. A committee was appointed to buy Netted Gem seed for those who wish it. Each grower is required to deposit \$1.00 for each cwt. of potatoes which he orders so that the committee can contract for seed.

An article was written for the local papers regarding grass pastures seeding this year. It is doubtful if many pastures will be seeded this year though several men have already ordered seed.

A year ago, winter killing of alfalfa on this project was very serious. A number of calls have been received regarding the obtaining of a hardy variety and, as the livestock business here depends to a great extent on the success of alfalfa, an attempt has been made to find pure Grimm alfalfa seed for some of the farmers. The Montana and South Dakota Agricultural Colleges were written for names and addresses of reliable growers and a correspondence was carried on with the growers recommended. It seems now that a good many men will cooperate in obtaining Grimm seed.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending February 16, the maximum temperature was 84, minimum 36, and greatest daily range 41. The total precipitation was .13 inch. Growing weather prevailed throughout most of the week. Several fruit trees began blooming. Oats apparently dead before the rain of a week ago are now growing out well. All cultivated plats were harrowed and plats B6-13 and 14 were plowed. Orchards B3 and C3 were cultivated. Orchard A1 was pruned and also trees on the lawn. Some fence repairing was done.

EMPLOYEES' LIABILITY.

There is being sent to each of the experiment farms a small supply of blanks for use in reporting personal injuries to employees while engaged in the line of duty. These forms are self-explanatory and should be used promptly in event of injury to an employee.

RUBBER BOOTS.

Field stations anticipating a need for rubber boots in the near future should place their orders as soon as possible, as these articles are now very scarce and there is considerable difficulty in securing desired sizes.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Boise.

Live Stock Developments in 1917.

General statement.--The lands on the Boise project were officially declared open during the year 1917 and a construction charge of \$80 per acre was announced. The first payment of 2 per cent was collected in December. Construction work, including the Arrowrock and Deer Flat reservoirs and the distribution system, is practically completed, both reservoirs having been used during the year. The water supply was inadequate on some parts of the project, due chiefly to a series of breaks in the main canal which prevented the complete filling of the Deer Flat reservoirs. Crops were harvested from 147,073 acres in 1917, as compared with 103,307 acres in 1916. The principal changes in the acreages of crops harvested were marked increases in alfalfa, apples and wheat, and material decreases in barley, corn and oats. The area of alfalfa harvested increased from 27,000 to 34,000 acres, or about 25 per cent. The barley acreage decreased 25 per cent, corn 50 per cent, and oats 25 per cent. The potato acreage, which was 2,165 acres, was practically double what it was in 1916, and the wheat acreage increase was from 17,000 to 25,000 acres, or about 50 per cent. The number of farms in operation on the project in 1917 was 2,380, as compared with 1,950 in 1916. The total value of farm crops increased from \$2,327,000 to \$4,383,000, and the average farm value of crops per acre increased from \$32 to \$49. There was a decrease in the number of hogs, dairy cattle, and mules, and increases in other live stock. The total value of live stock increased from \$1,377,000 to \$1,613,000.

The dairy industry.--The status of the dairy industry did not change materially during the year, although there was, perhaps, more than the usual unrest among individual dairy farmers. At the first of the year the shortage of hay tended to discourage dairying, but at the close of the year the sentiment in favor of dairying increased, due to the presence of a good supply of hay and the likelihood that some condenseries will be established on the project and result in increased prices for butterfat. The number of dairy cows decreased from 8,700 in 1916 to 8,266 at the close of 1917. The number of farms carrying dairy cows increased, however, from 1,249 to 1,413. The distribution of the cows on these farms is shown below:

Items.	1916	1917
Farms reported,.....	1950	2380
Farms reporting dairy cows,.....	1249	1413
" " " " 1 to 10*.....	1171	1339
" " " " 10 to 20,.....	67	68
" " " " 20 to 30,.....	8	4
" " " " over 30,.....	7	5.8

*60 per cent of the 1 to 10 group reported 1 or 2 cows.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Boise (continued).

Live Stock Developments in 1917 (continued).

There were no important activities in connection with either importation or exportation of dairy stock and no important changes in the status of breed preference. The principal development in connection with herd improvement was a growing sentiment in favor of the organization of one or more bull associations and the prospects for this work are encouraging.

The prices of feeds all increased materially, as indicated below:

Items.	1916	1917
Hay, per ton,.....	\$7 or less	\$15 or more
Silage, per ton,.....	\$3.00	\$10.00
Barley, per 100 lbs.,.....	\$1.30	\$ 2.35
Oats, " " "	\$1.20	\$ 2.30
Wheat, " " "	\$1.61	\$ 2.86

Incomplete reports show that no fewer than 30 new silos were built during the year. Milking machines are gradually gaining in favor, chiefly because of the increasing difficulty of securing satisfactory dairy labor. The losses from diseases among dairy cattle were less serious than in 1916, bloat in particular being almost entirely lacking, for reasons which are not understood. Some difficulty was experienced with abortion and the need for reliable information regarding the treatment of this disease is keenly felt.

The production of butterfat in 1917, as compared with 1916, and the average prices paid, are shown in the table on the following page, which, however, is of value chiefly as a comparison, as it does not include all the butterfat produced on the project and it does include some butterfat used on the project but produced elsewhere.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Boise (continued).

Live Stock Developments in 1917 (continued).

Manufacturers.	Pounds Butterfat Received		Average price Per Lb. B-F		Total amount paid for B-F	
	1916	1917	1916	1917	1916	1917
Hazelwood Creamery Co.						
Butter,.....	217,378	134,184	28¢	41¢	\$60,866	\$ 55,015
Cheese,.....	41,515	64,714	34¢	46¢	14,115	29,768
Jensma Creamery Co.						
1/Nampa,.....	220,000	100,680	34.4¢	46.6¢	75,690	46,917
Boise Co. Creamery Co.						
Butter,.....	167,807	161,976	30¢	41.8¢	50,342	67,801
2/Cheese,.....	334,563	432,341	41.2¢	47¢	137,840	203,632
Caldwell Coop. Creamery	135,642	108,720	28.25¢	41.5¢	38,319	45,119
Nampa " "	297,492	299,264	30¢	43¢	89,248	128,684
Parma Coop. Cheese Fact.	37,465	60,493	31.25¢	46.7¢	11,708	28,250
Total,.....	1451862	1362372	32.9¢	44.4¢	478,118	\$605,186

1/ Butter, cheese, and ice cream.

2/ 1916 factories at Meridian, Bowmont, McDermott,
1917 " " " " " " and Ustick.

The feed-cost of production, which was reported in 1916 as varying from about 8.7 cents to 22.8 cents per pound of butterfat, probably doubled during 1917. If the average butterfat production on the entire project is estimated to be 180 pounds per cow and the feed-cost based on 6 tons of hay at \$15 a ton, the feed-cost per pound of butterfat would be 50 cents; but, on the other hand, the average feed-cost found in the cow testing association from April, 1916, to April, 1917 was 15.2 cents per pound of butterfat. It should be noted, however, that the average production in the association was 285 pounds of butterfat per cow. During the year, an additional cooperative cheese factory was established at Ustick and a cooperative condensery was proposed. The cooperative butter and cheese factories apparently are in a thriving condition and the attitude toward them seems more favorable than ever before. The immediate future of the dairy industry seems brighter than it has for some time, due principally to the prospects for high prices for butterfat at the proposed condenseries.

The swine industry.--Swine production is probably at its low point on the Boise Project due to a number of circumstances which were fully discussed in the report for 1916. The continued high prices of grain and the regulations respecting feeding wheat to hogs have been the principal factors which have tended to offset the high prices of pork in 1917. A comparative statement of the swine population and distribution of hogs on the project in 1916 and 1917 is given in the table on the following page.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Boise (continued).

Live Stock Developments in 1917 (continued).

Items.	1916	1917
No. of hogs reported,.....	16,097	13,261
Average number per farm,.....	8.2	5.5
No. farms reporting no hogs,.....	---	540
No. farms reporting stock hogs only,.....	---	355
No. farms reporting brood sows,.....	832	731
No. farms reporting 1 to 5 brood sows,....	735	662
No. farms reporting 5 to 10 brood sows,...	68	46
No. farms reporting more than 10 sows,....	29	23

In accordance with the Government program for increased pork production in 1918, an effort was made through circular letters and otherwise to induce the farmers to effect a reasonable increase in the number of brood sows kept. The indications at the close of the year were that there would be a conservative increase in 1918. The principal development in connection with feeding was a slight increase in the interest in hogging-off various crops and in the use of self-feeders. The use of cull fruit also increased considerably as the fruit crop was the largest ever produced. There was almost entire freedom from infectious diseases during the year. One case of cholera occurred in the summer and in the fall this disease appeared almost simultaneously in five different localities. In all, there were about 12 outbreaks, a few of which were accompanied by some losses, but prompt action prevented any serious spread of the disease. Reports received from three shipping points on the project show that 116 cars were shipped in 1917 from these points as compared with 210 cars from the same points in 1916. Most of the shipments went to Seattle, Washington, Ogden, Utah, and Portland, Oregon. The prices received were the highest on record, the average top price at Portland being \$15.85, as compared with \$9.28 in 1916. The future development of the swine industry is problematical. The probability that milk condenseries will be established promises a decrease in swine production; but, on the other hand, the increase in the practice of hogging-off crops will enable farmers to keep more hogs and reduce production costs of labor, time, and money.

The beef industry.--The number of beef cattle on the project at the close of 1917 was 2,993 head, as compared with 2,296 head at the same period in 1916. There was very intense interest in beef production throughout 1916 but a reaction occurred early in 1917 because of the extremely high prices for hay. The Shorthorns have been more popular than any other beef breed and more noticeable progress was made in herd improvement with Shorthorns than

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Boise (continued).

Live Stock Developments in 1917 (continued).

with any other breed of live stock. The improvement has come largely through the purchase of females from outside points but within the year there have been some very high class bulls imported. Aside from blackleg, no serious trouble from disease was reported. During the year, a total of 2100 head in 230 herds were treated for this disease. The most important development in connection with the beef industry in 1917 was the organization and operation of a cooperative grazing association. This association is composed of 25 stock growers most of whom live in the vicinities of Meridian and Boise and who made use of the grazing lands in the Boise Forest. The cooperative herd, which included 700 head of cattle, was taken to the range on April 10 and the cattle were brought back about the middle of October. The length of time on the range was approximately six months. A numerical statement of the operations is given below.

Number of members,	25
Number of cattle taken to the range,.....	700
Number of cattle returned,.....	670
Number of cattle lost,.....	30
Percentage of loss,.....	4.3
No. lost going to range (weak stock)	15
No. lost from poisoning,.....	6
No. stolen,.....	1
No. unaccounted for,.....	8
Total expense,.....	\$2090.90
Average expense per head for cattle returned,.....	3.12
Herder's salary, \$2.25 per head	
for 670 head,.....	\$1507.50
Grazing fee, 700 head @ 45¢....	315.00
Salt, 3 tons (about 8½ lbs. per	
head) at \$16.80 per ton,..	50.40
Hay purchased on trip out,.....	120.00
Pasture expense on return trip,	5.00
Wages of association members	
accompanying cattle to and	
from range, 21 days @ \$4,...	84.00
Miscellaneous expenses,.....	9.00
Total,.....	\$2090.90

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Boise (continued).

Live Stock Developments in 1917 (continued).

The cattle sent out were of all ages, breeds and conditions. Due to a severe hay shortage in the spring, many of them were extremely poor when they started for the range, which accounts for losses on the trail. Most of the cattle, except a few cows with suckling calves, were in fair condition in the fall, although the range became poor after August 1 on account of drouth. The members of the association generally are well satisfied and probably most of them will participate in cooperative grazing in 1918. The most general complaint made related to the shortage of calves and the fact that many of the cows failed to breed on the range. The number and ages of bulls sent out undoubtedly were largely responsible for the latter condition, as there were not enough bulls and many of them were too young. It should be stated also that the methods of handling the herd during the summer are susceptible of much improvement.

The future of the beef industry on the project will probably include the development of better herds and some attention to baby beef production. Considering the small area of satisfactory range which is available, the development of the industry must be confined chiefly to the breeding of pure bred or high grade animals on the farms and to the feeding of stock from the ranges.

The sheep industry.--The status of the sheep industry on the project is encouraging. The interest in the industry is even better than it was a year ago and the demand for stock has been strong and prices good. According to the survey made by the Reclamation Service, there were 20,010 sheep on the project at the close of 1917, as compared with 14,937 at the close of 1916. The estimated value per head in 1917 was \$13.82, as compared with \$7.98 in 1916. The distribution of sheep on the farms in 1916 and 1917 is shown in the following table:

Items.	1916	1917
No. of farms reporting less than 25 head,	123	235
No. of farms reporting 25 to 50 head,....	31	36
No. of farms reporting 50 to 100 head,...	9	18
No. of farms reporting over 100 head,....	15	25
Total farms reporting sheep,.....	168	314

The use of silage as a sheep feed is becoming more common, the prejudice against the practice having been largely dispelled. Some grazing of ditch banks, stubble fields and corn fields prior to cutting the corn has been practiced, and a few of the larger owners run their bands on summer range in the hills. For 1918 a cooperative

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Boise (continued).

Live Stock Developments in 1917 (continued).

grazing association has been organized and expects to send sheep to the Payette Forest. Practically no losses occurred among ranch sheep during the year. As a result of this, shipments in 1917, as reported from three shipping points, amounted to 100 cars. The markets for both mutton and wool have been very strong. At Portland, the average top price for lambs in 1917 was 13.40 per hundred pounds, which was \$4.07 above the 1916 average, and \$5.52 above the average top for the past eight years at the Portland Stock Yards. The principal cooperative feature of the industry in 1917 was the operation of a small wool pool which was organized at Meridian and regarding which a complete report was made some time ago in the Weekly Bulletin. The future of the sheep industry on the project is very promising. Farmers who have never kept sheep before are finding them pleasant to handle, and present and prospective high prices furnish a strong attraction. A profitable sheep industry established on a stable basis is in prospect.

Miscellaneous.--The work of the office in 1917, as in previous years, was conducted in cooperation with the State Extension Department, the local officials of the Reclamation Service, the Forest Service, and the Bureau of Animal Industry. A summary of certain features of the work conducted during the year is given below.

Farm visits,.....	884
Office calls,.....	397
Persons visited,.....	1,352
Letters received,.....	373
Letters written,.....	449
Circulars issued,.....	22
Articles for publication,.....	11
Meetings attended,.....	103
Meetings addressed,.....	84
Attendance at meetings addressed,.....	2,696
Butterfat tests made,.....	699
Cattle tested for tuberculosis (2 herds).....	35
Cattle vaccinated for blackleg (230 herds)....	2,100
Hogs weighed in feeding tests,.....	382
Hogs inspected for cholera (11 herds).....	929
Hogs in herds found infected (2 herds).....	59
Hogs vaccinated (2 herds).....	56
Assistance given in connection with silos,....	11

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

Plans for the cooperative sheep grazing association for 1918 were partially completed during the week ending January 26. With the exception of one man who has sold out, all members of the association in 1917 are planning on sending out their stock again this year. In addition there are applications from 9 new men, 6 of whom have started in with sheep during the past year. As all the older members will be allowed an increase (up to 600 head) there will probably be four bands, or double last year's number, to send out this year.

A request to investigate a suspected case of poisoning in a pure bred Hampshire flock was answered in company with the Federal Inspector and the Deputy State Veterinarian on Saturday. The trouble was found to be due to the heavy feeding of grain before lambing and the failure to start the ewes on grain gradually. Because of the open winter practically all the ewes on the project are in good condition, hence, it seems best to feed no grain before lambing this year. On most farms, in addition to the hay, the ewes still have the run of the fields.

The test of feeding cut back lambs on hay and beet pulp was completed during the week ending February 2. Thirty-three lambs of the cross-bred breeding of the range were used in the test. The average daily ration was 2 pounds of hay and $5\frac{1}{2}$ pounds of beet pulp. Previous to being fed pulp, they were fed on hay alone. In order to get the shrink they were fed on hay alone for five days previous to the final weighing. During the 50 days during which records were kept of the 33 lambs, they gained a total of 378 pounds, or an average daily gain of 0.228 pound per head. They were fed 3300 pounds of alfalfa hay and 9035 pounds of beet pulp; or 873 pounds of alfalfa hay and 2390 pounds of beet pulp per hundredweight of gain. At \$14.00 per cwt. (the market price of lambs) and allowing the market price of \$15.00 a ton for the alfalfa, the beet pulp had a feeding value of \$6.24 per ton. The lambs were owned and fed by J. M. Stoddard & Son of Burley.

The sugar company is experiencing considerable difficulty in getting beet growing contracts signed. There are two large factories on the project. Because of the fear of a shortage of labor, and also because of a promise of high prices for other farm products, the farmers are not inclined to favor beet growing. Two meetings, one at Rupert and one at Burley, were held in regard to the situation. Mr. Jones, of the Office of Sugar Beet Investigations of the Department of Agriculture, and Mr. Brock, of the Food Administration, attended the meetings. The price offered for beets this year is \$9.00 per ton.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone.

During the week ending February 16, a meeting of those interested in sending cattle to the Forest Reserve range was held in this office, 17 men being present. Officers were elected and they set a date to receive bids for herding. A bid has already been received from the man who herded last two years. His bid is 60¢ per head per month, the owner standing all loss, or 75¢ per head per month and he stand one-third of all loss. Prospects seem good for a larger herd than was sent last year.

Returns were received on the carload of cattle received January 28. They were sold in Omaha 14 days after they were received. While they were a long time on the road, there were no injuries, and while the shrink on some was heavy, they sold very well. The steers sold for \$7.50 to \$8.50; a heifer sold for \$7.40, cows sold for \$7.15 to \$8.00; a calf sold for \$7.50 and 2 bulls sold at \$7.75. The shrinkage varied from that of a fat Shorthorn cow, which was 4%, to that of a small thin Jersey, which was 22%. The total shipping expense, not counting shrinkage, was \$1.00 per cwt, which included the return fare of the man who went with the car. The feed cost was about \$105.00.

Arrangements were completed for the College Short Course, which is to be held here Monday and Tuesday of next week.

During the week, 26 cattle, in 4 herds, were vaccinated for blackleg.

Uncompahgre.

The first part of the week ending February 16 was taken up with a trip to Lamar, Colorado, where information was gathered regarding the feeding of beet top silage. The remainder of the week was taken up with the work of arranging for Farmers' Institute to be held February 18 to 23 at the six community centers on the project. One day was partially spent in conference with the officials of the Forest Service at Delta.

The members of the wool growers' association at Montrose have conducting a poisoning campaign against predatory animals in the valley and have met with success in destroying a large number of the coyotes and bobcats.

Two outbreaks of scab in sheep are being investigated by a U. S. Inspector from the Denver office of the B. A. I. There has been very little found but some has been traced to a bunch brought from New Mexico last fall. The inspector will have full authority to act in this case.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte.

Several farms were visited during the week ending February 16 at the request of the operators for the purpose of investigating sickness among their hogs. Worms and poor houses seem to be the principal causes of trouble. So far there has been no cholera found in the valley.

A large farm sale was attended this week. This was a combination sale held by several neighboring farmers. Horses, hogs, and cattle all sold very well. Sixteen-hundred-pound horses sold for \$200.00 each; and coming three-year-old draft colts, only halter broken, sold for \$140.00 each. Milk cows averaged about \$100.00. The Holsteins seemed to be in much greater favor than the scrubs.

A few farms were visited where sheep or cattle are being fed. All of the stock was in very good condition but on an average the sheep are of better quality than the cattle. In some lots, the cattle are of especially poor quality. One car load was shipped out this week that were not nearly ready to go and the farmer had plenty of feed too. There is a big field for work to be done with regard to the selection, feeding, and shipping of cattle. It appears that most of the men here are better in handling hogs or sheep than they are with cattle.

A half day was spent with Superintendent Holden at the Experiment Farm, inspecting the live stock with him and going over the data compiled from the experiments in feeding.

Boise.

A rain on Tuesday of the week ending February 16 was followed by snow on Wednesday night and lower temperature on Thursday. The winter to date has remained remarkably open and mild. Many farmers are getting ready to sow wheat.

The local hay market is depressed somewhat by the continued warm weather, some hay selling at nine and ten dollars, while some buyers contend it will go still lower. The demand from outside points is still good at about \$20.00 f.o.b. Oregon Short Line stations, but there is a great deal of hay left and owners are unable to get it baled or to get cars to move it in large quantities.

The hog market is rising again after a considerable slump. Local buyers have recently been paying fourteen cents but the present market should justify 15½¢ to the producer.

On Thursday, the Canyon County Sheep Grazing Association met in Caldwell and perfected its organization. There are nine members, holding grazing permits for 2340 head of sheep on the Payette Forest, and one prospective member with a permit for 200 head. Herders have not yet been employed.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Pennsylvania Dog Law.

Under date of February 20, the Bureau of Markets made the following announcement regarding a dog law which recently went into effect in the State of Pennsylvania:

"A law designed to protect sheep and other live stock from dogs went into effect in Pennsylvania January 15, 1918. From a stockman's standpoint, there are a number of important features in this act. All dogs are required to be licensed and tagged with a license number, for which a fee of one to two dollars for male dogs and two to four dollars for female dogs is charged. Police officers are required to seize all dogs running at large; those without license tags will be killed, while those with license tags may be recovered by their owner upon payment of costs. Between the hours of sunset and sunrise, all dog keepers are required to confine their dogs either in buildings or pens from which they can not escape or have them securely tied. Dogs with or without license seen in the act of worrying live stock may be killed by any person, and the owner or tenant of any field may kill any unlicensed dog entering that field. The owner of live stock killed or injured by dogs will receive payment for damages upon proper proof of loss to the county authorities. When the owner of a dog damaging live stock is known, he shall be liable to the live stock owner for damages or to the county for the amount of damages paid by the county to the live stock owner."

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending February 23, the maximum temperature was 73, minimum 32, and greatest daily range 32. The total precipitation amounted to .17 inch.

Plats B6-15 and 16 were plowed and harrowed. Some manure was scattered on the lawn, and part of the walks were graveled. The flax varieties were planted for the Office of Cereal Investigations. Oats were drilled in on B-3 and C-3.

Yuma.

During the week ending February 2, the maximum temperature was 66.5, minimum 26.5, and greatest daily range 36.5

Early plantings of melons and cucumbers were made on field A-9. All row crops now growing on the farm were cultivated.

The weather at this season has been especially favorable for all outside work. Clearing and leveling were continued on the "D" series and a quantity of firewood was hauled and sawed.

The table on the following page presents the yields secured from the variety test of cottons grown at this station during the past season. The number of pounds of seed cotton required to gin out 500 pounds of fiber is in all cases approximated, as actual lint percentages for the season have not been figured from each variety grown in this block. The very good yields from both varieties of Egyptian cotton were possible partly because of the late date at which the first killing frost occurred.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued).

Cotton Varieties Grown on the Yuma Experiment Farm, Field D-17, 1917.

Variety	Plat area in Acres	Yield per Acre.		Pounds seed cotton per bale	Gross returns per Acre.	Yields per Acre Seed Cotton, lbs.		
		Seed cotton	Bales			1917	1916	1915
*Durango.....	.01258	2900						
Sea Island.....	"	119	.066	1800	\$ 25.67	119	105	909
Yuma.....	"	2169	1.204	"	468.70	2169	658	539
Pima.....	"	2184	1.214	"	472.40	2184	---	---
Meade.....	"	1422	.790	"	307.30	1422	981	966
Snowflake.....	"	1422	.790	"	307.30	1422	1007	---
Express.....	"	1907	1.156	1650	271.10	1907	1263	---
Lewis.....	"	1668	1.011	"	237.30	1668	1390	---
Foster.....	"	1787	1.083	"	254.10	1787	1109	1095
Keenen.....	"	1375	.833	"	195.40	1375	477	---
Columbia.....	"	1767	1.072	"	251.20	1767	1290	1624
*Durango.....	"	1311						
*Durango.....	.01255	2462						
Durango #13B0.....	"	2022	1.226	"	287.80	2022	----	----
Durango.....	"	1654	1.002	"	235.00	1654	1761	1362
Durango #18B0.....	"	1913	1.159	"	271.90	1913	----	----
Acala.....	"	1803	1.135	1525	241.30	1803	2620	1187
Kekchi.....	"	1251	.821	"	167.40	1251	917	1126
Tuxtla (acclimated)	"	1726	1.151	1500	207.20	1726	----	----
Tuxtla.....	"	1028	.685	"	123.40	1028	1756	887
Mixon.....	"	1227	.818	"	147.20	1227	----	----
Sproull.....	"	1634	1.088	"	196.00	1634	----	----
Garro Hill.....	"	80	.053	"	9.54	80	----	----
*Durango.....	"	1937						
*Durango.....	.01297	2024						
King.....	"	1997	1.330	"	239.50	1997	1809	----
Ideal.....	"	1851	1.234	"	222.00	1851	1701	----
Dixie.....	"	2620	1.745	"	314.10	2620	2296	----
Trice.....	"	1794	1.709	"	307.70	1794	1593	1031
Half & Half.....	"	1707	1.137	"	204.70	1707	1972	----
Cleveland.....	"	1769	1.175	"	211.40	1769	2079	----
Triumph.....	"	1361	.907	"	163.20	1361	1513	----
Lone Star.....	"	1503	1.003	"	180.60	1503	1216	951
No. 624.....	"	1122	.748	"	134.70	1122	1755	----
Holdon.....	"	1214	.810	"	145.80	1214	1784	618
*Durango.....	"	1315						
Average.....	-----	-----	1.207	1650	283.00	-----	-----	-----

*All outside rows of Durango.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Yuma (continued).

During the week ending February 9, the maximum temperature was 84, minimum 31, and greatest daily range 50.5.

Selections of Durango cotton on the breeding block A-24 were all picked this week. Some plants of excellent fiber for this variety occurred among these selections. Also, the yields secured from increase blocks of several of these numbers were very encouraging and as heavy as have been produced from any cotton on this station. A record of these yields is given below:

Selection Number.	Number of Rows	Plot area in acres.	Yield per plot, lbs. Seed Cotton	Yield per Acre.	
				Seed Cotton	Bales*
25-B-0....	7	.224	463	2068	1.253
18-B-1....	7	.202	353	1748	1.060
18-B-2....	8	.2552	735	2880	1.745
13-B-0....	3	.0737	221	2995	1.816

*1650 pounds seed cotton estimated per 500 pounds fiber.

During the week ending February 16, the maximum temperature was 77, minimum 32, and greatest daily range 44.

Four acres of garden and cover crops were irrigated. Variety tests of potatoes were planted on borders A-10-5, A-12-1, A-12-3, and A-14-1. Also, a hotbed was made for bedding sweet potato tubers.

Variety plantings of flax were rogued and hoed. Most of the cotton stalks on the farm were cut, and the following borders plowed: D-18 to 21, and D-23 to 26. Growth measurements were made of all trees in the deciduous orchard B-22 to 32 and pruning was begun.

Truckee-Carson.

During the two weeks ending February 23, gypsum was applied by means of the manure spreader to 8 plats in fields D, F, and H.

Field A-2 was plowed and replowed cross wise; A-3 was plowed twice and the north part of A-1 was plowed once.

In the summer of 1917, two of the cold frames were filled with alternate layers of soil and manure, watered occasionally, and turned several times. It was thought that this would make an excellent soil for the hotbeds and greenhouse in the spring of 1918. Samples taken of this compost last week showed the presence of 3.8% total alkali salts and a germination test with wheat showed that the alkali was present in sufficient amount to prevent germination. The original soil used in making the compost was known to be free from salts

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson (continued).

and the manure used was well rotted manure from the horse corral. It is not clear how the alkali got into the compost. It may have risen by capillarity from the bottom of the pits or may have been added by the irrigation water, or was originally in the soil or manure. The soil used was surface soil from the orchard, known to be good. The water used carries a very small percentage of alkali salts and has never caused trouble with growing plants in the greenhouse or hotbeds. The manure may have carried alkali salts and a part of the salts may have risen by capillarity although this seems improbable as the soil was generally loose and would not favor capillary action.

Two cows have had beet pulp silage as a part of their ration since February 5, but did not like it, and consequently did not clean it up well until the week beginning February 24. The milk yields obtained have been as follows:

Date.	Days	Ration.	Milk yield per day		Average.
			Holstein	Jersey	
Jan. 30 to Feb. 4	6	Alfalfa only.....	23.8	21.9	22.8
Feb. 5 to 7.	3	Alfalfa & Silage..	23.0	21.1	22.1
Feb. 8 to 12	5	" " " ..	22.9	21.3	22.0
Feb. 13 to 17	5	" " " ..	22.2	19.9	21.0
Feb. 17 to 22	5	" " " ..	22.8	21.9	22.3

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Shoshone.

Live Stock Developments in 1917.

General statement.--The live stock industries on the Shoshone project in 1917 continued in the stage of readjustment mentioned in the report for the year 1916. The situation was characterized by a marked increase in the interest in sheep production and a slight depression in dairying, beef production and swine raising. The high prices of feed and the scarcity of labor were important factors in the situation. The field work of this office was concerned with the four live stock industries named and was carried on in cooperation with the University of Wyoming and with various Federal agencies interested in the development of the project.

The dairy industry.--According to the Reclamation Service census, there was a total of 1,433 head of dairy stock on the project at the close of 1917. This number was 194 less than the number in 1916 and 312 less than the number on hand at the close of 1915. The decrease was due largely to the shipping out of inferior cows. The distribution of dairy stock on the project in 1916 and 1917 is shown below:

Item.	1916	1917
No. of dairy cattle reported,	1627	1433
Average number cows per farm,	2.65	2.33
No. farmers reporting 1 to 5 cows,	242	270
" " " 6 to 10 "	72	48
" " " 11 to 20 "	19	14
" " " 21 to 30 "	3	4
" " " 31 or more "	3	0

The importations were inconsiderable. A few cattle were brought in by farmers moving onto the project and a small number of heifer calves were imported from Wisconsin. Reports received at the end of the year from 225 stock growers on the project included 17 pure bred bulls, 4 grade bulls, and 40 pure bred dairy females. At the close of the year there was a decided shortage of bulls. Alfalfa, of course, was the principal feed used, most of the cows receiving little else. Corn silage was fed with good results on 6 farms. Marked progress was made in the establishment of grass pastures and some cows received beet tops and dried beet pulp. Some improvement was made in equipment during the year, particularly with reference to dairy barns. Aside from some slight difficulty with bloat and a little trouble with abortion, there were no difficulties with disease. A part of the butter fat produced on the project is purchased by the Powell Cooperative Creamery, which, during the year,

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Shoshone (continued).

Live Stock Developments in 1917 (continued).

produced 73,300 pounds of butter and supplied practically all the local ice cream trade. Merchants at Garland and Ralston bought some cream, and shipped it to Billings and Basin. The average monthly prices paid for butter fat by the cooperative creamery at Powell ranged from 34 cents, in February, to 48 cents in October. It is to be expected that as the agriculture of the project becomes stabilized and farm labor conditions improve, the dairy industry will increase in importance.

Beef production.--The number and distribution of beef cattle on the project in 1916 and 1917 are shown in the following table:

Items.	1916	1917
Total number of beef cattle reported,	976	947
Average number per farm,	1.59	1.54
Number of farmers reporting 1 to 5,	72	78
" " " " 6 to 10,	23	21
" " " " 11 to 20,	8	16
" " " " 21 to 30,	0	3
" " " " 31 or over, ...	9	6

A few beef cattle were brought onto the project from the surrounding country during the year and 22 carloads were shipped to market, in addition to some which were sold to ranchers off the project. There is a decided shortage of good beef bulls on the project and no pure bred female beef animals are kept. The feed used during the year was obtained from the range surrounding the project and that in the Shoshone National Forest in the summer, and alfalfa hay, beet tops and grain straw were fed during the winter. The cooperative grazing association sent out a smaller herd than was sent out in 1916, chiefly because in that year the results were not satisfactory. In 1917, however, the results secured were entirely satisfactory and it is expected that the cooperative herd will be much larger in 1918. The cost of grazing on the National Forest Reserve range amounted to 50 cents per month per head for herding and salt, and 31 cents per head per season for the grazing permit. The cost of pasturing on the public domain adjoining the project was the same as that on the National Forest less the amount of the grazing fee, but the results were much more satisfactory. A few cattle were lost from blackleg, but, aside from this, there were no disease difficulties. An important development of the year was that of cooperative shipping. Sixteen of the 22 cars of cattle marketed

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Shoshone (continued).

Live Stock Developments in 1917 (continued).

were shipped cooperatively, with the aid of this office. All the shipments were made to Omaha except one, which went to Denver. The cooperative shipments contained 448 head of cattle, which were owned by 168 farmers. These cattle were given distinctive marks at the time of shipment and were sold separately at the market, the expense of the shipment being prorated according to the weights of the animals. The results of cooperative shipping were generally very satisfactory, particularly with reference to prices received, which were materially higher than those obtainable through other methods.

The swine industry.--The number of hogs on the market and their distribution in various sized herds in 1916 and 1917 are shown in the following table:

Items.	1916	1917
No. of hogs on project at close of year	3368	3078
Average number of hogs per farm,	5.48	5.01
Number of farms having 1 to 10 hogs, ..	161	196
" " " " 11 to 20 " ..	32	33
" " " " 21 to 40 " ..	27	16
" " " " 41 to 100 " ..	9	18
" " " " 101 to 200 " ..	3	1

It will be noticed that the swine population at the close of the year was about 10 per cent less than it was at the close of 1916. A few breeding hogs were imported to the project during the year and 23 carloads of hogs were shipped out. Most of the latter consisted of light stockers which were shipped to the corn belt for feeding. Most of the males used are purebred and the Duroc-Jersey is the predominating breed. The 225 farmers reporting on their live stock reported a total of 290 sows bred or to be bred for spring litters in 1918. The majority of the farmers breed only for spring litters. The feeds used during the year include alfalfa, wheat, skim milk, oats, barley, beets, beet pulp and tankage. There is some tendency toward heavier feeding and quicker finishing, and hogging-off grain crops is growing in importance. A very large proportion of the spring pigs of 1917 were shipped into Nebraska as stockers. They sold for 15 to 16 cents a pound, f.o.b. project points. It seems that while the price of



DEMONSTRATIONS ON RECLAMATION PROJECTS.

Shoshone (continued).

Live Stock Developments in 1917 (continued).

wheat remains high most of the surplus hogs will be sold as stockers. The swine industry is closely related to grain production on the project, as extensive use is made of swine in cleaning up grain fields and consuming other waste grain. As the grain acreage is expected to be large in 1918, it is likely that there will be some increase in the swine population. Swine are also used to some extent in consuming waste potatoes and skim milk. Future development of the industry will probably be closely associated with the development of grain farming and of the dairy industry, as it seems certain that swine production will be based almost entirely on the utilization of waste materials.

The sheep industry.--The high prices for mutton and wool, and the success which has been had by the few farmers who have grown sheep in the past to consume waste products on the farm, have resulted in a very marked increase in sheep production on the project. The following table shows the number of sheep on hand at the close of 1916 and at the same period in 1917:

Items.	1916	1917
Number of sheep on project farms,	1645	2930
Average number of sheep per farm,	2.68	4.75
No. of farms having 1 to 10 sheep,	29	35
" " " " 11 to 30 "	9	7
" " " " 31 to 60 "	5	4
" " " " 61 to 100 "	0	3
" " " " 101 to 200 "	3	1
" " " " more than 200 "	3	6

Practically all the sheep on the project are breeding ewes, as sheep feeding is practiced to only a slight extent. Cotswold rams were used on most of the ewes in 1917 and most of them were registered. They were obtained through this office from a breeder near the project. A few Hampshire rams were used. Several of the farmers used the range adjoining the project to some extent for sheep pasture and some use was made of vacant farm units on the project. Most of the sheep growers, however, pastured their sheep on alfalfa. Only one farmer reported any serious loss from bloat. Some attention has been given by this office to the possibility of arranging for a cooperative band of sheep for the Shoshone Forest in 1918, and the use of grass pastures for sheep grazing has also been given some attention. There were no serious losses from disease on the project during the year and, with one exception, no

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Shoshone (continued).

Live Stock Developments in 1917 (continued).

losses from bloat. Six carloads of sheep were marketed, most of them old ewes which had been bought off the range and fed on the farms for a year or two. The local butchers bought a large percentage of the farm-raised lambs. The cost of production has been low, chiefly because the sheep have been kept almost exclusively to utilize waste materials. The price of wool during the year ranged from 42 to 50 cents per pound. Practically all of this was sold cooperatively. The sheep owners delivered their wool at a warehouse in Powell and then invited bids. The wool sold cooperatively brought from 46 to 50 cents per pound and the wool that was sold individually brought about 42 cents. In view of the possibilities of using sheep to utilize beet tops, grain stubble, alfalfa stubble, and other waste materials, it appears that with the development of more cooperation the farm sheep industry will increase materially in importance.

Miscellaneous.--The following tables contain numerical statements of certain features of the agricultural development of the project in 1917 and of the work of this office in connection therewith:

Shipments of Agricultural Products.

Cattle, cars,	22
Hogs, cars,	23
Sheep, cars,	6
Horses, cars,	2
Alfalfa meal, tons (approximately),	8,000
Alfalfa hay, baled, cars,	174
Oats, cars,	36
Wheat, cars,	39
Butter, pounds,	73,300
Honey, cars,	4
Sweet clover seed, cars,	3
Potatoes, cars,	43
Straw, cars,	1
Sugar beets, cars,	137

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Shoshone (continued).

Live Stock Developments in 1917 (continued).Range of Prices.

Item	Amount		Month		Dec. Prices
	Low	High	Low	High	
Alfalfa, in stack, per ton, .	\$12.50	\$20.00	July	May	\$18.00
Wheat, per cwt.,	1.85	4.50	Oct-Dec	May	1.85
Oats, per cwt.,	0.82	3.00	Oct-Nov	May-June	0.92
Barley, per cwt.,	1.05	3.00	Oct.	July	1.47
Potatoes, per cwt.,	0.75	5.00	Oct.	May-June	0.84
Butter fat, per pound,	0.345	0.48	Feb.	Oct.	0.46
Hogs, per cwt.,	12.50	15.50	March	Dec.	15.50
Wool, per pound,	0.42	0.50	----	-----	-----

Field Work.

Farm visits,	498
Office calls and other conferences,	1534
Letters written,	313
Articles for local papers,	40
Bulletins distributed,	25
Meetings attended,	22
Herds tested for butter fat production,	20
Cows tested in above herds,	53
Herds treated for blackleg,	15
Cattle treated in above herds,	99
Consultations regarding live stock problems---	
Securing stock,	189
Feeds and feeding, including range utilization,	627
Breeding,	71
Herd improvement,	88
Equipment,	73
Manufacture and marketing,	984
Diseases, pests, and minor ailments,	138
Stock management and miscellaneous,	166
Consultations regarding miscellaneous subjects,	106

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

The following notes are taken from reports recently made by Mr. Bean:

Feeding Apple Pomace.

Ten Tieton farmers have been feeding apple pomace from a local apple juice products plant this winter. The pomace is passed twice through powerful hydraulic presses and weighs about fifty pounds per cubic foot when packed, as in loading into a truck bed. It has been given to the farmers for hauling it away from the factory, inasmuch as machinery to convert it into jellies and preserves was not installed this year. Arrangements were made with trucks for hire to haul the pomace to the farms at an average rate of 15¢ per ton mile. Upon application to the Northern Pacific Railway Company, the freight rate was reduced from the rate on apples and potatoes to the rate granted fertilizers, a reduction of over fifty per cent. It is estimated that over five hundred tons of pomace were hauled by wagons and auto trucks to the project farms at an average cost of less than \$2.00 per ton. Four car loads, of from thirty to forty-five tons each, were shipped to the farmers in the Cowichee valley, at an average cost of \$1.75 at point of unloading. All farms on which pomace is being fed have been visited several times. Although no definite data have been kept, it appears that the pomace has a feeding value at least equal to that of good corn silage. The men who have fed it are all enthusiastically in favor of using it next year, especially if alfalfa hay and corn silage maintain their present value of about \$16.00 and \$8.00 per ton, respectively.

Cooperative Grazing Affairs.

A number of the members of the Tieton Livestock Association are inclined to oppose a recent ruling by the Forest Service, requiring that only pure bred registered beef bulls could be used on the range this year. Prior to 1917, the range bulls used here were principally grade Holsteins and Shorthorns. In 1917, pure bred beef bulls were required but the line between pure and grade breeding was not closely guarded. The objection to the new regulations are that pure bred bulls can not be secured which will do at all well under range conditions, and that the available animals of this class are so high priced that the farmer can not afford to buy them.

There is a great deal of dissatisfaction among the men who have been allowed to run large herds on the range prior to the settlement of the irrigated land and the consequent reduction of the protective limit. The cattle must be moved onto and off the range at times when farm work is usually very pressing. The association by-laws

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

have required that the members who are running cattle in the herd must help in the spring and fall drives or furnish suitable help. It has usually taken about fifteen men to collect the herd from the spring range and drive them onto the summer range. An equal number are required to collect the herd in the fall and bring them back to the farm. Both of these drives are usually followed by a second to pick up animals missed the first time. It is the experience of men who have left the care of their cattle to others that the cattle were not all collected. The basis of a great deal of complaint, therefore, is that a man can not afford to spend so much time in moving the number of cattle he is now allowed. The farmer with only a few head complains likewise, saying that he can not spend so much time on the drives and that unless he does his loss is, through neglect, unnecessarily heavy. An effort will be made at the association's annual meeting to remedy some of the defects of the present system.

Market Conditions at the Opening of the Year.

The local price offered for butter fat in sour cream advanced from 50 to 54 cents. Prime two-hundred-pound pigs are quoted at \$15.50 per hundred with prime steers at \$8.50. The bean market continues unchanged with the growers of the Yakima Pinks holding for about eight cents per pound and the buyers offering about six cents. The potato market is very unsatisfactory from the grower's standpoint. The buying price at digging time ranged around \$30.00 per ton. Many potatoes were pitted or put into storage houses in spite of this very satisfactory price. The extreme warm winter, with considerable moisture, is causing marked depreciation, particularly in pitted stock. The present prices are from \$15.00 to \$20.00 per ton with an occasional very choice lot selling as high as \$22.00 per ton. The grain market, particularly mill feeds, continues very strong. Inasmuch as the principal movement of grain at this time is from dealer to farmer, these prices are of chief interest. Oats are costing about \$70.00 per ton, shelled corn and barley at from \$55.00 to \$60.00 per ton. Wheat, bran and middlings are fluctuating from \$35.00 to \$40.00 with dried beet pulp at \$38.00 per ton. The price of alfalfa hay is gradually becoming weaker due to the very mild winter. In some districts, hay which was purchased by sheep and cattle men for winter feeding, can be had at \$12.00 per ton in the stack, a price of from \$3.00 to \$4.00 under the buying price of the same hay last fall. In other districts, good hay in stacks can be had at from \$14.00 to \$15.00 per ton.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Uncompahgre.

The week ending February 23 was taken up with the holding of six farmers' institutes at the centers on the project, in cooperation with the County Agent of Montrose County and speakers from the Colorado Agricultural College. Professor Morton, of the Animal Husbandry Department, spoke on live stock problems; Mr. E. A. Bader on crops, and Miss Haynes on food conservation. The total attendance at the meetings was 310 men and women.

The farm bureau for Montrose County was organized during the week with 100 members.

The shortage of grain for feeding hogs is causing concern. Corn prices are prohibitive and wheat can not be obtained. An attempt is being made to find barley in the territory adjacent to the project.

Truckee-Carson.

During the two weeks ending February 23, some time has been devoted to the cooperative marketing of cattle and hogs. On February 11, the third cooperative shipment of cattle was sent to San Francisco. This shipment consisted almost entirely of aged dairy cows that were no longer considered useful in the dairy business. For the most part they were not in extra good condition. The prices received ranged from 7 to $7\frac{1}{2}$ cents per pound on the market. Nine farmers took part in this shipment.

On February 18, a cooperative shipment of hogs was sent to Reno, eight farmers participating in this shipment. The prices received were $13\frac{1}{2}$ cents for light hogs, $14\frac{1}{2}$ cents for hogs weighing 140 to 175, and $14\text{-}3/4$ cents for hogs weighing 175 to 300. The shipping expense, including shrinkage, amounted to approximately 75 cents per hundred. Arrangements have already been made for a cooperative shipment of hogs to take place on March 2nd. Eight farmers will take part in this shipment, which will be sent to San Francisco. At the beginning of the present season, the management of the Western Meat Company, at Reno, agreed to pay 50 cents per hundred under the San Francisco quotations for hogs, this being about the difference in shipping cost between Reno and San Francisco. With the last few shipments to Reno, their payments were based on 75 cents under San Francisco quotations. Believing it will be an advantage of 25 cents per hundred to ship to the coast, the shipment March 3 will be consigned to the Western Meat Company at San Francisco.

In connection with the cooperative marketing of hogs, there has been considerable discussion with the farmers concerning the advisability of swine growing under the present uncertain grain situation. The tendency on the part of the farmers seems to very materially limit the production of all classes of live stock which require the use of grain for profitable development.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone.

During the week ending February 23, the Agricultural College Short Course was held on the project. Meetings were held only in the afternoons as the last two years' experience showed that it was practically useless to have meetings in the forenoon and at night. The Short Course had been well advertised by the local papers, by posters, and by a circular letter which the college sent out, but the attendance was very small. It is not known why the meetings were not better attended except that the weather was rather disagreeable. Mr. E. F. Burton discussed feeds and feeding, Dr. E. H. Lehnert discussed blackleg vaccination and hog cholera, Mr. A. E. Bowman discussed county agent work, and Mrs. McFarlane discussed food and clothing.

The directors of the Shoshone Livestock Association hired a herder for the herd which is to be pastured on the Forest Reserve range. If practically all who send cattle have no objection to insurance, the herder will charge 70¢ per head per month and stand one-third of all loss. If there is serious objection to insurance, the herder will charge 60¢ per head per month and stand no loss.

A movement is being started to get sheep from range flocks distributed among project farmers next winter on shares. The main trouble with this is that few of the farmers are able to fence their farms for sheep. There is a possibility that a wealthy sheepman may buy woven wire in car lots and sell it at cost to farmers who will take sheep on shares, taking pay for the fence out of the farmers' share of the profit.

A few of the farmers are thinking of growing field peas and White Smyrna barley for hog feed and sunflowers for silage this year. Correspondence has been started to assist them in obtaining seed.

Agricultural Production for 1918.

The Department Weekly Newsletter for February 27 contains a comprehensive general statement of the agricultural program for 1918. The statement re-emphasizes and amplifies the food-production program issued by the Department in August, 1917, calls attention to the more important things to be accomplished, and indicates the general principles to be observed in adopting methods of procedure.

Each of the field men should familiarize himself with the contents of this statement, so as to be informed regarding the national agricultural program and to be able to assist in shaping the agricultural activities of his project in accordance with the general requirements outlined in the program.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending March 2, the maximum temperature was 93, minimum 41, and greatest daily range 39. Wednesday was the hottest day so far this year and a high south wind prevailed all day. The sky was cloudy continuously during the remainder of the week and there was a total precipitation of .94 inch, all in gentle showers.

It was rather cool part of the time but ideal weather for oats, which made rapid growth. Most of the fruit trees are in full bloom. The alfalfa in the nursery is making fine growth and also the Bermuda grass on most of the lawn, especially where manure has been applied.

Labor was employed in planting nursery rows of flax for the Office of Cereal Investigations, setting stakes on rotation plats, planting corn on rotation plats and for the Office of Corn Investigations, and taking soil samples. Orchards A1 and E4 were cultivated.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Umatilla.

The demonstration work in irrigation and crop production on the Umatilla project in future will be conducted by Mr. R. W. Allen, who was formerly Superintendent of the Umatilla Experiment Farm. Mr. Allen has been transferred to this office and the Experiment Farm has been placed in charge of Mr. H. K. Dean, who has been Mr. Allen's assistant since 1912.

Shoshone.

A number of office calls were received during the week ending March 2 regarding applications for grazing cattle on the Forest Reserve range this summer. Applications from 38 farmers for 510 cattle had been sent in through this office by March 1st.

More interest is being taken in grass pastures this year than was expected, seed having already been ordered cooperatively for about 88 acres of pasture. Several farmers have expressed satisfaction with results obtained on some of the pastures which were seeded in the spring of 1916.

An attempt is being made to find a market for a carload of fall pigs which are for sale as stockers.

The following is a statement of shipments and prices of agricultural products for the month of February:

Shipments.

Alfalfa meal, cars,	54
Butter from cooperative creamery, lbs.	4219
Baled hay, cars,	12
Oats, cars,	5
Hogs, cars,	2

Prices.

Alfalfa in stack, per ton,	\$19.00
Alfalfa, baled, f.o.b. cars, per ton	\$22.00
Wheat, per bushel,	1.85
Oats, per bushel,	1.08
Potatoes, per bushel,	0.75
Butter fat, per pound,	0.52

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Uncompahgre.

The greater part of the week ending March 2 was spent at the office as the weather conditions were such that the roads were nearly impassible.

One day was spent at a meeting of the Wool Growers' Association at Montrose. The purpose of the meeting was to meet with the State Veterinarian and the Federal Veterinarian, Drs. Lamb and Howe, to discuss a general order for dipping the sheep in the valley before they go onto the Reserve. There have been several cases of scab in the valley due to the bringing in of a band of scabby sheep last fall from the south. So far, the disease has been confined to three herds. It was thought advisable to issue a general dipping order but this could not be agreed to by the members of the association. The State and Federal Veterinarians are going to take charge and the order will probably be issued.

The car shortage has affected the movement of potatoes to a great extent. There are many cars of this crop still in storage with no way to move them with any degree of satisfaction.

Hay prices are somewhat lower. The price is at \$12.00 to \$15.00.

North Platte.

At the close of the week ending March 9, a more optimistic feeling prevailed among the hog raisers on the project, as the price of pork was higher than it had been, and a larger number of hogs will be kept this spring than would have been kept had the prospects not looked more encouraging than they did some few weeks ago. There is a marked tendency all over the project for more farmers to keep a few hogs and for those who have had large herds, and made hog raising and feeding a business, to cut down the size of their herds and make hog raising a part of the scheme of general farming.

Hay is still selling at about \$20.00 per ton but in spite of this fact all classes of stocker cattle and milk cows are in good demand and sell readily at high prices. A drove of about 40 head of white face calves, of medium quality, sold this week at a general farm sale for \$40.00 per head. These calves would not average in weight over 400 pounds.

The car situation has improved greatly and there is now a free movement of potatoes and the farmers are taking advantage of the fair weather to get their potatoes hauled in so as to start their spring work. The average price is \$1.00 per cwt. Practically all the buyers are complaining about the large per cent of potatoes which are infected with dry rot.

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Field Notes.

North Platte (continued).

Sheep are being shipped in large numbers and the coming two weeks most of the sheep on feed here will be shipped out. Prices are somewhat better than they were two weeks ago. Most of the shipments are going to either Chicago or St. Joseph.

A Federal Scab Inspector has been working on the project recently and several hundred head of cattle have been dipped. A Farmers' Association at Morrill have installed a large dipping vat at their sales pavilion, a man is in charge, and a fee of six cents per head is charged for the dipping.

WESTERN IRRIGATION AGRICULTURE.

FIELD ASSISTANTS.

The shortage of men and the operation of the laws relating to military service have made it so difficult to secure proper assistance in the field experimental work that the Civil Service Commission, upon request from this Department, has granted authority to this office to appoint five assistants in field experiments at salaries ranging from \$85 to \$120 per month for a period of three months.

Under this authority it is believed that existing vacancies in the scientific staff at the field stations can be filled by prompt appointment of men who are found available and that with the usual three-months' extension allowed by the Civil Service Commission in such cases we will be able to secure the assistants necessary during the coming crop season. Any farm superintendent desiring to secure the appointment of a man qualified to assist in the scientific work during the coming season should advise the office promptly, using the appointment request blank recently provided and having in mind all the orders recently published touching on personnel matters.

It is probable that in some instances satisfactory appointees can take Civil Service examinations during their temporary service and be placed in the regular service at the close of the season.

APPOINTMENTS.

The following orders have just been received from the Secretary's office relating to the personnel:

In requesting appointments a statement should be included showing the present occupation of the proposed employee. If he is already connected with the Department the concurrence of the employee's present chief of bureau should be obtained before the recommendation is submitted to the Secretary.

If a prospective employee has had any previous connection with the Department such fact should be indicated in the recommendation.

Information must be furnished as to whether the appointee is a citizen of the United States by birth or by naturalization.

The salary the appointee has been receiving prior to his entrance into the Department must be shown.

If requests relating to personnel matters are to be acted upon promptly, field men must adhere strictly to all the orders and requests concerning them which have been published recently in the WEEKLY BULLETIN and also use the forms which have been provided for the purpose. These orders and requests are coming in so frequently that it seems impracticable to keep the request blanks up to date.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending March 9, the maximum temperature was 93, minimum 48, and greatest daily range 31. The precipitation amounted to .11 inch. The weather was good for the corn recently planted but the oats began to show the effect of the high temperatures and low moisture supply. Corn on the rotation plats has come up to a good stand. Oats on some of the rotation plats have begun to head.

All fields not in crops were harrowed. Plats on which crops were growing for green manure were plowed and harrowed. No hay was obtained from the plat of field peas usually cut for hay. The growth of green manure crops was very light. The work of taking soil samples was completed. The planting of corn for the Office of Corn Investigations was finished. The planting of corn in the wide and narrow row test was made.

Truckee-Carson.

During the two weeks ending March 9, detailed work was performed as follows: The leveling of orchards and gardens, Field A, was completed; the greenhouse beds were filled with fresh earth and the hotbeds were prepared ready for planting; the drain and irrigation ditches over the entire farm were cleaned and the irrigation boxes were repaired.

Mr. Headley went by auto to Reno on the 1st of March to confer with Prof. Frandsen in regard to cooperative experiments with eelworm infected potatoes. The plan of seed treatment for 1918 will be as given below. The plantings will be made in duplicate in plat H-18, and another lot will be planted in pots in the greenhouse.

1. Healthy seed untreated to be planted every third row.
2. Diseased seed untreated.
3. Diseased treated at 30 degrees C for 24 hours.
4. Diseased treated at 35 degrees C for 12 hours.
5. Diseased treated at 35 degrees C for 24 hours.
6. Diseased treated at 35 degrees C for 48 hours.
7. Diseased treated at 40 degrees C for 6 hours.
8. Diseased treated at 40 degrees C for 15 hours.
9. Diseased treated at 40 degrees C for 24 hours.
10. Diseased treated at 40 degrees C for 36 hours.
11. Diseased treated at 45 degrees C for 6 hours.
12. Diseased treated at 45 degrees C for 12 hours.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson (continued).

The eel-worm counts of the potatoes raised from heavily infected eel-worm seed, treated at different temperatures for varying lengths of time, have been completed. It appears that treatment of the seed for 18 or 24 hours was decidedly beneficial. The original seed used was very heavily infected, and it is probable that with lightly infected seed the percentage of eel-worms surviving would be somewhat less. The results are encouraging.

The results obtained by feeding 6 Duroc-Berkshire crosses from November 17 to December 5 are summarized in the accompanying table. The feeding began when the pigs were 9 weeks old, with an average weight of 41.3 pounds. One pig was killed at the end of the first period because of his poor condition.

On December 6, the pigs were shipped to San Francisco and sold at 14-1/4 cents. The weight on the wagon on the day of shipment was 890 pounds, the weight at San Francisco 2 days later was 785 pounds, a loss of 105 pounds, which is 11.8% of the original weight. The expense of shipment for freight, feed and care enroute was \$5.80. The shrinkage in weight and other expenses amounted to approximately 2-1/4 cents so that the net live weight value of the hogs on the farm was about 12 cents per pound.

In figuring the financial results of experiments with pigs it would appear that the net value on the farm should be used rather than the values quoted in the market reports.

Item.	Summary Nov. 17 to March 2 105 days
Number of pigs,	6
Average initial weight per pig, pounds,	41.3
Total initial weight, pounds,	289
Final weight, pounds,	913
Total gain in weight, pounds,	660
Barley fed, pounds,	2989
Shorts fed, pounds,	22
Tankage fed, pounds,	282
Total grain fed, pounds,	3293
Grain per pound gain, pounds,	5.28

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Grain Crops on Reclamation Projects.

In an article in the Weekly Bulletin for February 16, 1918, attention was called to the need for certain readjustments in the agricultural practices of irrigation farmers with reference to the production of satisfactory grain crops to supplement alfalfa in swine feeding and to use in finishing hogs for market. In that article special attention was paid to field peas, grown alone or in combination with some of the small grains. Since that time, reports from the fieldmen have indicated that farmers are somewhat anxious regarding the possibilities of substituting some other grain for wheat, particularly on projects where wheat has been used commonly as feed for hogs. It has seemed desirable, therefore, to get together for the information of the fieldmen some data bearing on the production of wheat and other grains on the Reclamation projects, with special reference to comparative yields.

Principal grain crops.--The grain crops of importance on these lands are wheat, oats, barley, corn and grain sorghums, and they rank in the order named on the basis of total acreage harvested during the three years considered in this article. Rye, spelt and emmer are grown for grain to an inconsiderable extent. Grain sorghums are important on only two projects considered, the Salt River and the Yuma, but on those projects they lead all grains in both acreage and yield. In the present discussion, wheat, oats, barley and corn are considered first, and a brief statement regarding the grain sorghums follows.

Basic data.--In order to get a reasonably reliable basis for computations and comparisons, use has been made of the crop reports made by the Reclamation Service for the years 1913, 1914 and 1915. The figures for these years are used because the period preceded the time of marked expansions in the production of certain grains (wheat, in particular) and other decided readjustments resulting from war conditions. Use is made of the figures showing acreages and yields on 15 projects, counting the two Minidoka units as separate projects. The grain acreage on these lands, which are located in 13 states, represents about 75 to 80 per cent of the total grain acreage on all the Government projects. In the following tables, the average yield shown in each instance has been calculated from the total acreage harvested during the three-year period and the total production during the same period, so that the variations in acreage and yield from year to year and on different projects have been given due consideration. In other words, the averages are all weighted.

Comparison of barley, corn, oats and wheat.--Table 1 shows the total acreage and average yield in bushels per acre of barley, corn, oats and wheat on each of 15 projects during the three-year period, 1913-15.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Grain Crops on Reclamation Projects (continued).

Table 1.--Total Acreages and Average Yields in Bushels per Acre.

Project	Barley		Corn		Oats		Wheat	
	Acres	Av. Yield	Acres	Av. Yield	Acres	Av. Yield	Acres	Av. Yield
Salt River,	58,471	26	5,397	21	6,629	35	30,467	22
Yuma,	4,426	30	808	23	-----	--	3,221	19
Uncompahgre,	604	28	1,684	32	16,348	31	16,393	25
Boise,	7,027	23	16,463	23	18,911	24	40,604	20
Minidoka (Gravity).	2,888	35	1,015	22	13,814	31	13,078	23
Minidoka (Pumping).	2,709	24	52**	10**	11,547	27	22,236	20
Huntley,	969	18	1,332	20	9,682	30	5,709	20
North Platte,	6,921	27	19,928	19	22,719	25	4,669	16
Truckee-Carson, ...	4,942	25	-----	--	1,128	37	5,618	20
Rio Grande,	636*	16*	18,775	16	2,598	43	8,939	21
Klamath,	12,677	30	-----	--	7,503	33	4,666	18
Belle Fourche,	3,805	26	10,744	19	16,175	33	23,728	15
Sunnyside,	312**	32**	18,685	55	207**	60**	1,595**	20**
Tieton,	1,236	36	3,960	29	2,570	33	4,030	24
Shoshone,	2,126	19	-----	--	12,235	25	7,407	16
Total,	<u>109,749</u>	<u>26.4</u>	<u>98,843</u>	<u>26.8</u>	<u>142,066</u>	<u>28.9</u>	<u>197,360</u>	<u>20.0</u>
Total production, bushels,	2,897,500		2,650,500		4,113,000		3,956,000	

*Two years only.

** One year only.

As shown in table 1, the average yield of barley on these 15 projects for the 3-year period was 26.4 bushels per acre; that of corn was 26.8 bushels; of oats, 28.9 bushels, and of wheat, 20.0 bushels per acre. These averages are based on 3-year totals of 109,749 acres and 2,897,500 bushels of barley, 98,843 acres and 2,650,500 bushels of corn, 142,066 acres and 4,113,000 bushels of oats, and 197,360 acres and 3,956,000 bushels of wheat. The average yield per acre of barley ranged from 16 bushels, on the Rio Grande, to 36 bushels, on the Tieton; that of corn, from 10, on the Minidoka (Pumping), to 55, on the Sunnyside; that of oats, from 24, on the Boise, to 60, on the Sunnyside; and that of wheat, from 15, on the Belle Fourche, to 25, on the Uncompahgre.

The best way to compare these yields is to reduce them all to the basis of pounds per acre. This has been done and the results are shown in table 2. The weights per bushel used in converting the figures are, barley, 48 pounds; corn, 56 pounds; oats, 32 pounds; and wheat, 60 pounds.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Grain Crops on Reclamation Projects (continued).

Table 2.--Average Yields in Pounds per Acre.

Project	Barley	Corn	Oats	Wheat
Salt River,	1248	1176	1120	1320
Yuma,	1440	1288	----	1140
Uncompahgre,	1344	1792	992	1500
Boise,	1104	1288	768	1200
Minidoka (Gravity)..	1680	1232	992	1380
Minidoka (Pumping)..	1152	560	864	1200
Huntley,	864	1120	960	1200
North Platte,	1296	1064	800	960
Truckee-Carson,	1200	----	1184	1200
Rio Grande,	768	896	1376	1260
Klamath,	1440	----	1056	1080
Belle Fourche,	1248	1064	1056	900
Sunnyside,	1536	3080	1920	1200
Tieton,	1728	1624	1056	1440
Shoshone,	912	----	800	960
Average,	1267	1501	925	1200

Table 2 shows that, considering all 15 projects, corn, with an average yield of 1501 pounds, produced more grain per acre than either of the other 3 crops. It was followed by barley, averaging 1267 pounds; wheat, 1200 pounds; and oats, 925 pounds per acre. The relative productiveness of the four crops on each of the 15 projects is better indicated in table 3, which shows the rank both in acreage and in average yield of each of the crops on each project during the 3-year period.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Grain Crops on Reclamation Projects (continued).

Table 3.--Rank in Acreage and in Average Yield.

Project	Barley		Corn		Oats		Wheat	
	Acre- age.	Av. Yield	Acre- age.	Av. Yield	Acre- age.	Av. Yield	Acre- age.	Av. Yield
Salt River,	1	2	4	3	3	4	2	1
Yuma,	1	1	3	2	-	-	2	3
Uncompahgre,	4	3	3	1	2	4	1	2
Boise,	4	3	3	1	2	4	1	2
Minidoka (Gravity).	3	1	4	3	1	4	2	2
Minidoka (Pumping).	3	2	4	4	2	3	1	1
Huntley,	4	4	3	2	1	3	2	1
North Platte,	3	1	2	2	1	4	4	3
Truckee-Carson, ...	2	1	-	-	3	2	1	1
Rio Grande,	4	4	1	3	3	1	2	2
Klamath,	1	1	-	-	2	3	3	2
Belle Fourche,	4	1	3	2	2	3	1	4
Sunnyside,	3	3	1	1	4	2	2	4
Tieton,	4	1	2	2	3	4	1	3
Shoshone,	3	2	-	-	1	3	2	1
Average,	3	2	4	1	2	4	1	3

Table 3 indicates that there was no consistent general relationship between the acreage and the yield per acre of these four grain crops during the period under consideration. Considering all 15 projects, wheat ranked first in acreage and third in yield; oats were second in acreage and fourth in yield; barley was third in acreage and second in yield; and corn was fourth in acreage and first in yield. On a few of the projects, the highest yielding grain was the most extensively planted, as in the cases of barley on the Yuma and Klamath, corn on the Sunnyside, and wheat on the Minidoka (Pumping) and the Truckee-Carson. On the other hand, there were many instances of negative relationships, of which the Belle Fourche furnishes an extreme example, as shown below:

<u>Rank.</u>	<u>Acreage.</u>	<u>Yield per acre.</u>
1	Wheat	Barley
2	Oats	Corn
3	Corn	Oats
4	Barley	Wheat

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Grain Crops on Reclamation Projects (continued).

Wheat, which was first in total acreage and third in yield on the 15 projects, was first in acreage on 6 projects and first in yield on 5 projects. Oats, second in total acreage and fourth in yield, was first in acreage on 4 projects and first in yield on only 1 project. Corn, with the lowest total acreage and ranking first in yield in the group of projects, was first in acreage on 2 projects and first in yield on 3. Barley, which in the group ranked third in acreage and second in yield, was first in acreage on 3 projects and first in yield on 7. Generally speaking, the yield showing of barley was very good and that of oats was very poor.

Grain sorghums in the Southwest.--As previously stated, the grain sorghums are specially important in the Southwest, on the Salt River and Yuma projects, in particular. A comparison of the total acreages and average yields per acre of this crop and of barley, corn, oats and wheat on these two projects during the 3-year period under consideration is given in table 4.

Table 4.--Grain Sorghums Compared with Other Grains on the Salt River and Yuma Projects.

Crop	Salt River				Yuma			
	Acres	Av. Yield lbs.	Rank in acreage	Rank in Yield	Acres	Av. Yield lbs.	Rank in acreage	Rank in Yield
Barley...	58,471	1248	2	3	4,426	1440	2	2
Corn.....	5,397	1176	5	4	808	1288	4	3
Oats.....	6,629	1120	4	5	-----	-----	-	-
Wheat....	30,467	1320	3	2	3,221	1140	3	4
Grain sorghums	61,483	1680	1	1	12,402	2010	1	1

The outstanding feature of the data in table 4 is the favorable showing made by the grain sorghums in comparison with other grains on the two projects. The high average yields secured from grain sorghums are reflected in the acreage devoted to the crop on each project. This showing indicates something of the popularity and value of the crop in irrigated districts of the Southwest, where it is widely used and highly prized as a feed for live stock.

Comments.--There is probably no single explanation for the inconsistent relationships, with reference to acreage and yield, among the grains produced on the Reclamation projects. The following points are of interest in this connection:

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Grain Crops on Reclamation Projects (continued).

1.--It appears that the barley acreage might well be materially increased on several of the projects, particularly where grain is to be grown primarily as a feed for live stock. Considering the good yields made by barley, it is to be expected that the acreage devoted to the crop will increase as interest in improved methods of live stock production develops. It is not improbable, also, that higher yields of barley will be secured when its cultural requirements under irrigation come to be better understood.

2.--While the yield of corn averages higher than that of any of the other grains commonly grown on the projects, the cost of producing corn is relatively high and the hazards of unfavorable weather are relatively great. When the crop can be harvested by hogs or sheep, however, the cost of production may be materially reduced; and when suitable corn varieties are secured and acclimatized the hazards of production will be lessened.

3.--It is difficult to find a justification for the large acreage of oats in view of the low yields of that crop. Doubtless factors of culture or use or marketability have influenced farmers in this connection, but considering yields and feeding value, particularly where a more highly carbonaceous feed is needed to supplement alfalfa, it appears that corn or barley should be rather extensively substituted for oats in the grain acreage.

4.--Marketability probably has been the chief factor influencing the acreage of wheat, and this crop is likely to continue to be important. Its production for feed purposes, however, might well be reduced in many instances, and increased attention given to barley and corn.

5.--In considering the comparative desirability of the different grains for the Reclamation projects, it is desirable to bear in mind the fundamental importance of live stock production in irrigation agriculture. In selecting grain crops for these lands, the usefulness of the different grains as feed for live stock should receive careful consideration as well as the yields which are likely to be secured. It is important, also, that comparisons be made on the basis of pounds per acre rather than bushels per acre.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

Three days of the week ending March 2 were spent in attending the Western Dairy Products Show and the Western Dairy Instructors Association Convention at Yakima.

The Western Dairy Products Show fulfilled all expectations in drawing exhibits of dairy products. There were over eighty entries of market milk and cream, about seventy-five of butter and twenty-five of cheese. The dairy machinery displays were not as complete as was anticipated due almost entirely to the scarcity of labor which made it difficult for manufacturers and dealers of equipment and supplies to prepare their exhibits and place them at the show. There were from fifty to two hundred visitors at each of the five open sessions. Teams of college students from Washington, Oregon and Idaho competed in butter and dairy cattle judging contests.

Practically all of the awards in the market milk and cream department went to the dairies supplying Portland. Dr. Mac, chief of the milk inspection at Portland, is undoubtedly responsible for this success. His attitude toward inspection is that of an educator rather than a policeman and is therefore desired over that employed by some local inspectors who have had less success. This is mentioned because it is the attitude adapted by this office in regard to the milk supply of local cheese factories in opposition to the expressed desire of milk inspectors to shut up some dairies whose milk was in bad condition. Another indication of the success of this attitude is that the Harwood Cooperative factory won third prize on a cheese in competition with entries from seven states, securing the highest score for the state of Washington. While this success is largely due to the skill of the cheese maker, the farmers must be given credit for furnishing a good quality of milk.

Fifteen office conferences were held during the week ending March 9, six farms were visited, and six calls for assistance were answered. Considerable time was spent with Messrs. H. H. Chaplin, Kehrl, Colcord and Hoyt, all of the U. S. Dairy Division, in discussing the present dairy problems and plans for future work.

The first shipment of 1918 Yakima wool was made to Portland this week. The lot weighed 64,000 pounds and is considered to be in better condition than last year's clip. The wool has not been sold.

One of the Yakima hop kilns which was remodeled this season for fruit evaporation is now experimenting with the evaporation

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Field Notes.

Tieton (continued).

of sliced potatoes. A local milling company has installed a potato flour mill to handle the evaporated potatoes. There have been no definite prices announced as yet for potatoes to be used in this manner or for the flour. If the venture is successful, it will undoubtedly do much to relieve local potato growers of stocks on hand.

Uncompahgre.

During the week ending March 9, 13 farms were visited, but on account of the weather making the roads too bad for long trips, most of the week was spent at the office and in the vicinity of Montrose.

A call was received to investigate a case of foot disease among range cattle. From all information gathered, the trouble seems to be foot rot. A report of this trouble was sent to the State Veterinarian and the Agricultural College at Fort Collins, with the idea of getting more information.

Our evening meeting was attended during the week at one of the granges where dairying and beef raising and their relation to each other were discussed.

A little better movement of potatoes has been had during the week as it is possible to use ordinary cars now in shipping as the weather has warmed up more.

Truckee-Carson.

There has been a reoccurrence of cerebral meningitis among the horses of the project. Last year a considerable number were lost from this trouble. Practically every animal that became affected died. On Wednesday of the week ending March 9, the field agent of the Live Stock Disease Control Board came to the project for the purpose of immunizing horses against the disease by the method recently perfected by the Kentucky State Experiment Station. There will no doubt be considerable demand for immunization along this line as heretofore there has been no relief.

On Monday, a representative of the State Disease Control Board came to the project for the purpose of vaccinating horses against distemper. This disease has caused a great annoyance and some loss to the ranchers. The present outbreak seems to be unusually severe.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Truckee-Carson (continued).

On Tuesday, a cooperative shipment of hogs was sent to the Western Meat Company at South San Francisco. One hundred and five head of hogs, averaging 175 pounds, were sent. The price received for prime hogs weighing 140 to 300 pounds was 15-3/4 cents. This was one-quarter cent more than the quotations at the time for San Francisco, and was 75 cents per hundred more than the quotations for prime hogs at Reno. In addition to this advance of 75 cents per hundred, there was a difference of classification in favor of shipping to San Francisco. The requirement for prime hogs in Reno was 175 to 300 pounds. This difference of classification, in addition to the increased price, made it very much to the advantage of the farmers to ship to San Francisco. Mr. Cline accompanied the shipment.

The last cooperative shipment was more satisfactory than those that have been made to the Reno branch of the Western Meat Company, and it is quite likely that future shipments will go to San Francisco.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending March 16, the maximum temperature was 94, minimum 46, and greatest daily range 36. The precipitation amounted to .01 of an inch. High winds and high temperatures prevailed during the first part of the week. The latter half of the week was cool. Corn made good growth but oats wilted badly.

Labor was employed in setting new stakes on the rotation plats, weeding on the rotation fields and orchards, cleaning up about the grounds, repairing the farm dwelling, and grading the field roads. Milo was planted on the rotation plats. Corn on the rotation plats was harrowed.

Yuma.

During the weeks ending February 23, March 2, 9 and 16, temperatures and precipitation were recorded at this station as follows:

Week ending	Maximum	Minimum	G.D. Range	Precipitation
2/23	74	29	41	.11
3/2	79	41	35	.01
3/9	83	38.5	43	.12
3/16	80	39	34	.085

Thirty-six acres were irrigated on March 2 and four acres on March 11.

During this period men and teams have been employed largely in plowing and preparing land for spring plantings. Clearing on the "D" series has been nearly completed. Some changes of land levels have been started on the lower "A" series.

The deciduous variety orchard and a part of the seedling fig orchard have been pruned.

All seed cotton on hand of Upland varieties has been ginned over the saw gin.

Variety plantings were made on plats A-12-3 and C-35 on March 7. Sweet corn was planted on C-6 on March 6. Pima cotton was planted on borders D-21, 25 and 26 on March 16.

The seedling pecan trees on F-1 were transplanted to a stand and extra trees dug for other plantings.

The table on the following page shows the yields of the principal cotton tests conducted at this station during 1917.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Yuma (continued).

Average Yield of Field Plats in Seed Cotton per Acre of Varieties Grown in Cultural Tests on Yuma Experiment Farm in 1917. A Comparison of Thinning Practices and a Comparison of "Furrow-Bed" Method with "Flat" Method of Planting.

Item.	Pima	Yuma	Durango #13	Durango #18	Acala	Tuxtla
<u>FLAT PLANTINGS</u>						
Thinned Once 13 to 15"	1623	1681	1856	1709	2087	1872
Thinned Once 17 to 19"	1661	1654	1965	1819	1878	1778
Thinned Twice 9 to 11"	1508	1732	2247	2062	2071	2040
Thinned Twice 13 to 15"	1562	1512	2032	1951	2093	1980
Average Thinned Twice	1535	1622	2140	2007	2082	2010
Average Thinned Once	1621	1668	1911	1764	1983	1825
Average Flat Plantings	1578	1645	2026	1886	2033	1918
<u>FURROW-BED PLANTINGS</u>						
7' 4" per pair of rows Thinned Once 9 to 11"	1594	1721				
7' 4" per pair of rows Thinned Once 12 to 16"	1746	1733	1741	1654		
8' 6" per pair of rows Thinned Once 12 to 16"			1846			
8' per pair of rows Thinned Once 12 to 16"	1685					
7' per pair of rows Thinned Once 12 to 16"	1823					
6' per pair of rows Thinned Once 12 to 16"	1852		1628			
Average Furrow-Bed Plantings.	1760	1727	1738	1654		
Average Flat Plantings	1578	1645	2026	1886	2033	1918
Grand average lbs. seed cotton	1669	1686	1882	1770	2033	1918
Pounds seed cotton per bale .	1800	1800	1565	1500	1500	1500
Grand Average Pounds Fiber ..	464	469	601	591	678	640
Current Price per Pound	\$.76	\$.70	\$.40	\$.39	\$.30	\$.30
Gross Return for Lint	352.64	328.30	240.40	230.49	203.40	192.00
Gross Return for Seed at \$60.00 per Ton	36.15	36.51	38.43	35.37	40.65	38.34
Total Gross Return	388.79	364.81	278.83	265.86	244.05	230.34
Estimated Cost of Production and Handling	138.52	139.37	117.12	114.14	110.75	107.85
Net Return per Acre	250.27	225.44	161.71	151.72	133.30	122.49
Net Return per Acre under Previous Normal Sale and Labor Prices	44.77	26.91	36.13	29.39	19.79	16.30

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued).

In comparing the furrow-bed method of planting in the preceding table with flat plantings, it will be noted that with Egyptian varieties there was an average excess of 132 pounds seed cotton per acre in favor of the furrow-bed planting. With the two strains of Durango, there were greater yields produced from flat plantings. This behavior of Durango, however, can not be accepted as a true difference, due to the very poor stand of the Durango on the furrow-bed method. This was occasioned by planting in furrows which were too abrupt, allowing much of the seed to roll to the bottom of the furrow.

The two Durango strains, numbers 13 and 18, are quite different cottons. The lint percentages used in the figures of the table are from actual ginned quantities, while the percentages used for the Egyptian and Short Staple varieties are approximate. Number 18 has a higher lint percentage than Number 13, but the fiber averages a little shorter and has been figured in each calculation at one-cent less per pound.

It is interesting to note the very small difference of average yield between Pima and Yuma Egyptian. The early pickings of Pima were heaviest, while the Yuma produced the heaviest late pickings. It would seem that very little can be said regarding differences in seed cotton yields between these two varieties. At the present date, seed cotton from these two varieties has not been ginned and the lint percentages have not been ascertained. From behavior of these two varieties the past season, it would seem that Pima is nearly two weeks earlier in this region than Yuma. It must be considered, however, that climatic conditions during 1917 were not normal.

When calculating the "net return per acre under previous normal sale and labor prices", the following prices were used: Cotton seed, \$30.00 per ton; fiber, per pound, Pima 26¢, Yuma 22¢, Durango #13, 16¢, Durango #18, 14¢, Acala 11¢, and Tuxtla 11¢.

Umatilla.

In order to ascertain the value of the local practice of sowing grain in alfalfa to be cut as hay with the first crop, seven twentieth-acre plats were planted in field C1 during the week ending March 16. The following varieties were used: Barley, beardless and common; oats, Shadeland Climax and Eclipse; rye, common; wheat, Marquis and Bluestem.

Approximately an acre and a half in fields B2 and B4, which was graded into borders and sown to rye last fall, was planted with alfalfa.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Umatilla (continued).

A system of dikes, making borders on the grounds around the buildings, was completed. Work was done on the irrigation system in field A and a number of turnout boxes were constructed. The maximum temperature during the week was 69, and the minimum 22. The total precipitation amounted to .12 inch.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

A number of meetings were held on the South Side during the week ending February 16. They were well attended.

The problems that are causing the farmers the greatest concern this year are a possible labor shortage and a desire for exact information as to what shall be produced. It is quite evident that, for best results, calls for increased production should be specific as possible. For instance, last year much literature of a general nature for an increased production of potatoes was distributed by the Agricultural Extension Department, the States Relation Service, and numerous individuals. The result was a one hundred per cent increase of the potato acreage which was put out at a great expense. Most of the potatoes are still on the farms. Early in the summer, the State Farm Markets Bureau advised the farmers to hold their alfalfa for \$15 a ton in the stack. The result was that many cattle were sacrificed and there are thousands of tons of hay, much of which may be left over. The proposition is generally understood by the farmers, yet they are asking that only correct information be given them.

The February tests of the Pioneer Cow Testing Association, as completed during the week ending March 2, show that the Holstein herd of Leaf and Jones, of Rupert, again led in milk production. This herd of 20 registered cows produced an average of 1110 pounds of milk. The average fat production was 32.7 pounds.

The most profitable herd on the project was the grade Holstein herd of the Clover Lea Farm of Burley, which made an average net profit of \$11.67. The herd of Leaf and Jones made an average profit of \$11.56.

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Field Notes.

Minidoka (continued).

A grade Holstein owned by the Gochenour Brothers, of Burley, made the highest milk record of the year, producing 1962 pounds of milk in two milkings a day. The fat content was 58.5 pounds.

Three of the project herds, having a total of 56 cows on test, averaged over 30 pounds fat to the cow.

As a result of the poor showing made by them, eleven cows in one herd have been sold. Most of these went for meat purposes. They will be replaced with better cows.

The first case of rabies on the project since last March was reported and investigated during the week ending March 9. A rabid coyote brought in the infection. The loss was confined to two head of cattle and one dog.

In cooperation with the Minidoka County Farm Bureau, the local Granges, and the State Extension Department, a number of agricultural meetings were held at central points. With the exception of the Rupert meeting, they were well attended and the interest good.

The herd of cows that was sold as a result of the poor records made in the cow testing association were replaced with high grade Holsteins that were purchased on the Twin Falls tract.

The organization of the Minidoka Project Sheep Grazing Association for 1918 was completed during the week ending March 16. Mr. McPheters, Supervisor of the Sawtooth National Forest, attended the meetings, visited the farms of the members and assisted with the organization.

The present association has 21 members, owning a total of 4720 head of sheep. The owners who cooperate in making up one range band will select their own herder and will elect one of their number to cooperate with the others, the four men thus forming an advisory council to transact such business as the employment of the camp tenders, meeting with the Forestry officials, and the making of such arrangements as may be necessary for the successful management of the bands on the range.

With the exception of one man, who has sold out, all members of the association in 1917 are sending out their sheep.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre.

The greater part of the week ending March 16 was taken up with a trip to the west end of Montrose County with the County Agent for the purpose of getting information relative to the live stock growing and feeding during winter in that section, mainly as it relates to the project.

On Saturday, two farms were visited with the consulting veterinarian from the Colorado Agricultural College to investigate cases of sickness in cattle. One trouble was found to be foot-rot, which has caused the loss of feet from several head of cattle. The veterinarian recommended the thorough cleaning of the foot and then treatment with caustic potash.

There has been a movement among the potato growers to sell their potatoes at the rate of 95 cents per cwt. in 100 pound sacks to the government. This was the bid submitted by the growers.

Most of the beans of the Pinto variety have been contracted at 8 cents to the government.

Seventeen farms were visited during the week ending March 23. The greater part of the week was spent in the field in connection with live stock problems.

Assistance was given in the location of a carload of fat hogs in the Olathe section. These are to be sent to the Denver market. One day was given to the matter of examining sheep, with Dr. Howe of the Bureau of Animal Industry, for the location of scabies. On this trip, a visit was made in Delta County where scab was located on one of the farms. The Bucks that were used on this herd have been scattered widely over the county. A close examination of the bands in that section will be made by Mr. Fifield, an inspector, who was stationed in the valley to handle the situation. Much concern is being felt by the sheepmen regarding the control of this trouble.

Many potatoes have been lost in the valley due to the car shortage. They are now being moved at 50¢ per hundred by a large number of producers. Regardless of this fact, a survey taken by Mr. Pyle, shows that 8 per cent more potatoes will be grown on the project next year than in normal years. A slight increase is also reported for next year in Delta County.

The cheese factory at Delta is being enlarged to provide room for a creamery in connection with the cheese making.

The Montrose Creamery is paying 41¢ for butterfat at the close of the week. This plant reports that more cream was handled from March 1 to 15 of this year than in any other like period since the plant was started.

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Field Notes.

North Platte.

The rise in price of \$1.00 per cwt. on lambs during the week ending March 23 has acted as an incentive to the lamb feeders to market their heaviest lambs, and a large number have been put on to the market. If the present price continues, many of the feeders will break even on their winters' feed. The talk among the sheep feeders and cattle feeders is that they will not feed the coming winter.

A number of farms were visited at the request of the owners to inspect their hogs for cholera, but no cholera was found. In one instance, the pigs were found to be very badly affected with sore mouth, the disease having spread to about half of the pigs in the herd, or to about 50 head of them. The iodine treatment was used on the pigs and the sows' teats and underlines were washed with a carbolic acid solution.

The board of directors of the Scottsbluff Creamery Company and the First National Bank were conferred with in regard to shipping some high grade Holstein cows into the valley and selling them to the farmers at cost. These boards agreed to furnish the money for such an enterprise and were heartily in favor of bringing more dairy cows into this region. Plans are underway at present to learn how many cows could be so disposed of among the farmers and when this is determined the cows will be brought in.

A very enthusiastic meeting of farmers was held at one of the country school houses northeast of Mitchell last Friday evening where about 35 farmers were in attendance. The principal subjects of discussion were cooperation and dairying.

The farmers all through the valley are working in the fields and getting them ready for the spring crops. The weather has been excellent all week for field work and the ground is in very good condition for work but it is too dry for seed to sprout to good advantage.

The number of farm sales have decreased very noticeably but all live stock being offered for sale is bringing good prices and the demand is still very good.

WESTERN IRRIGATION AGRICULTURE

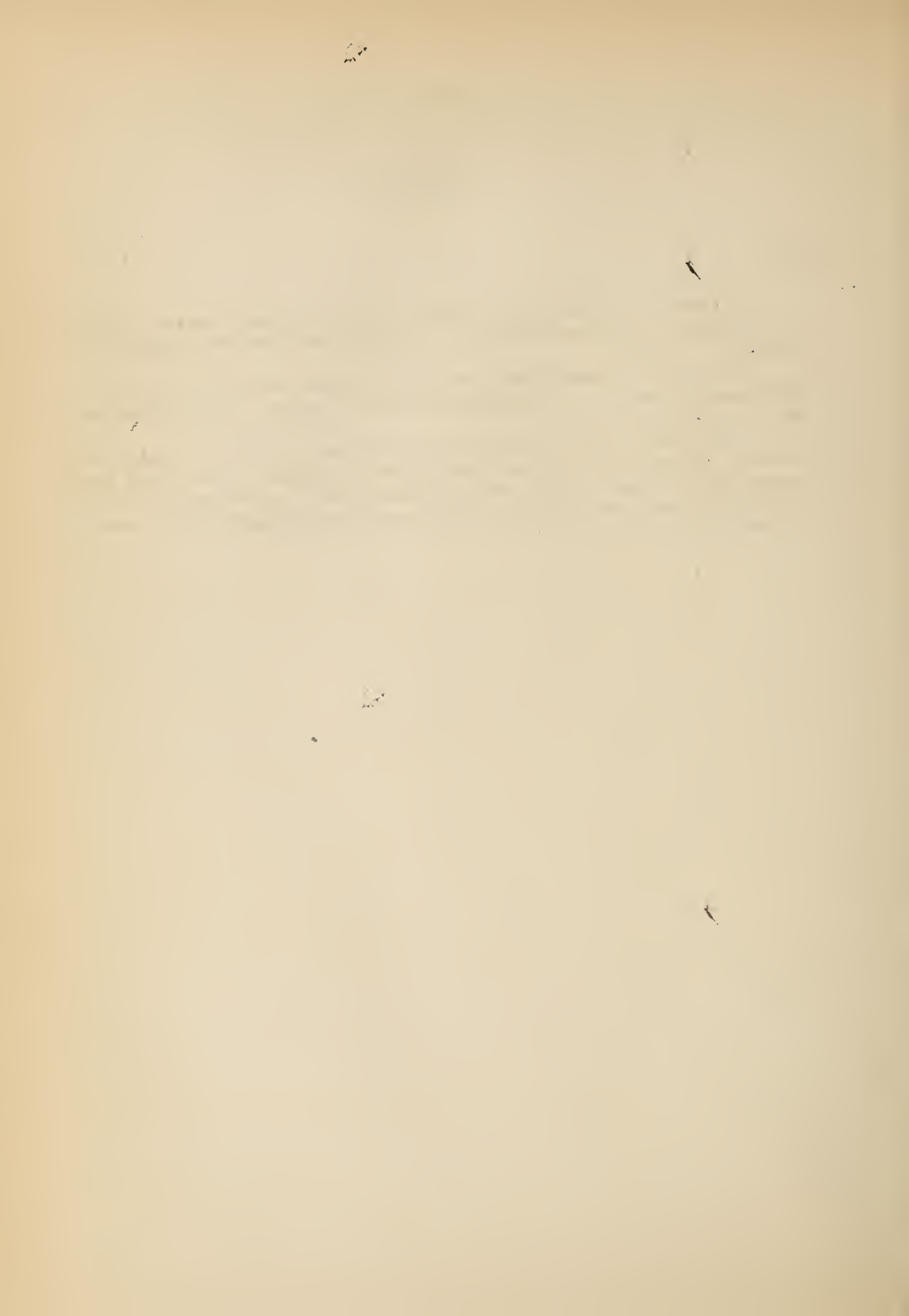
FIELD NOTES.

Unatilla.

A team of horses was purchased during the week ending March 23, to replace the old team which is no longer able to do the work required.

Two men were used during the entire week on the irrigation system constructing new turnouts and field gates. The orchards were pruned.

Mr. Kerhli, bull association specialist of the Salt Lake Dairy Office, visited the farm and project on Saturday. The local bull association is one of the most successful in the country. At present it has five registered bulls and approximately 250 cows are signed up.



DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Shoshone.

During the week ending March 9 an article was written for the local papers discussing the treatment recommended by the Montana Experiment Station for the prevention of hairlessness in pigs. There has been considerable loss on this project from this trouble. Another article was written discussing the importance of inoculation for blackleg and offering to assist anyone who needs assistance.

A meeting of the directors of one of the stallion associations was held in this office to hire a man to care for the horses during the season. A man was hired at \$100 per month and board.

During the week ending March 16, 12 farm visits were made, 38 office calls were received and 24 other conferences were held.

The annual meeting of the stockholders of the Powell Cooperative Creamery was held. All indebtedness has been paid and there is a small surplus on hand. Although the creamery is receiving slightly less cream than it was receiving this time last year, it is doing fairly well. There was a change in management March 1, and considerable time is being given to the management now, until it gets to running smoothly.

A trip was made to Billings to assist in making a change in the methods of marketing butter, to look up a market for stock hogs, and to investigate the wool market.

One of the farmers representing a number of potato growers, went to Helena and bought about 140,000 pounds of Netted Gem seed potatoes at \$2 per cwt., f.o.b., Helena. The freight from Helena here, is 35 cents per cwt. After these were bought, the Southern Idaho Producers' Association quoted good seed at \$1.25 delivered. However, there is little dissatisfaction, because northern seed is preferred and disease is feared in the Idaho potatoes.

Tieton.

Twenty-four farms were visited during the week ending March 23, seven calls for assistance were answered, and fifteen office conferences were held.

One and one-half days was spent with county agriculturist Price, and Mr. Davis, manager of the Mutual Creamery Company at Toopenish, in regard to turning the milk from the farmers' cooperative organizations to the Mutual Creamery at condensary prices. The Moxee and Harwood factories agreed to sell milk for at least

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Tieton (continued).

a short time, on the basis of \$2.80 per cwt. at the factory for 3.8 to 4 per cent milk with the customary four cents deduction or addition to the price for each 0.1 per cent test below or above the standard.

Farm work has begun in earnest on the project, and the land is working well. Much plowing has been done and considerable wheat has been seeded. Approximately 1,000 pounds of field peas have been ordered for project farmers during the week and these will be planted next week.

Prime hogs are now quoted at \$16.50 per cwt, from the local market. The price of butterfat in sour cream has dropped from 54 cents to 49 cents, due to a similar drop on the Seattle market. It is practically impossible to buy any of the cereals except for seeding purposes at this time, consequently hogs are being finished at this time principally on wheat middlings at \$50 per ton.

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WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

Huntley.

Field work was begun during the week ending March 30. This work consisted of disking sod land and harrowing fall plowed land. The soil is in excellent condition as regards moisture. There was practically no run-off during the winter or spring and the moisture from the heavy snows has all entered the soil.

Winter wheat, as a rule, appears to be in good condition and only a few cases of winter killing have been reported.

There appears to be much interest among project farmers concerning irrigated pastures and a large number of farmers are planting the grass mixture recommended by the Experiment Farm. There appears to be a shortage of Brome grass seed. Only one local dealer has been able so far to secure seed of this grass, and he only in a limited quantity, which has been entirely sold, so that a number of farmers are planting the mixture without Brome grass.

The local Sugar Company has recently announced a flat rate price of \$10 per ton for sugar beets, but it appears probable that even at this rate the beet acreage will be small and that an increased acreage of wheat will be seeded.

Truckee-Carson.

During the three weeks ending March 30, detailed work was performed as follows: Wheat was planted in plats D-3 and 7; E-1, 2, 7, 8; F-6 and 11, on March 22. Barley was planted in plats F-5 and 9 and G-1 to 5, on March 28. Sweet clover was planted on plats O-1 and 2 and on a small plat west of the cook house. A fence was built around the hot beds and cold frames to protect them from poultry, and the sweet clover, plat B5, was fenced for pasturing cows as soon as the clover has made sufficient growth. Eleven varieties of onions and 4 varieties of peas were planted in field A-2. Wheat varieties planted on the farm of Fred Sander, March 27 and 28 were, Early Baart, Dicklow, Bluestem, Little Club, Marquis, Sonora, Rieti, and Defiance. A duplicate planting will be made one week later.

The following plants have been received from the Office of Seed and Plant Introduction:

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Truckee-Carson (continued).

2	-	43679	<i>Campylotropis macrocarpa</i>
2	-	43862	<i>Populus maximowiczii</i>
1	-	44022	<i>Solanum muricatum</i>
2	-	34494	<i>Cudrania tricuspidata</i>
1	-	43425	<i>Prunus salicifolia</i>
2	-	41455	<i>Prunus</i> sp.
2	-	32670	<i>Prunus spinosa</i> x <i>domestica</i>
2	-	32673	<i>Prunus spinosa</i> x <i>domestica</i>
10	-	39434	<i>Aralia cordata</i>
1	-	43438	<i>Rubus</i> sp.
10	-	44103	<i>Helianthus angustifolius</i>
3	-	42282	<i>Caragana pygmaea</i>
2	-	42282	<i>Ligustrum acutissimum</i>
1	-	43794	<i>Wistaria venusta.</i>

Three sacks of gypsum were applied to an area of 2100 square feet of alkali land on the farm of Dan Evans, and 5 sacks were applied to 3760 square feet of non-productive land on the farm of W. G. Rawles, March 25.

Spring vetch was sown among the trees in O-1, March 30.

Dean C. S. Knight and V. E. Scott, of the University of Nevada were callers at the experiment farm March 29.

Barley and rape were seeded in plat C1 and spring rye and rape in C-4 on March 30. Alfalfa was drilled into the wheat in plats D3, D7, F6 and F11 on March 30.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes

Umatilla.

The following notes, taken from recent reports made by Mr. Allen, indicate something of the recent developments on the project:

The development of land increased to a very marked extent during the past winter. This appears to be due to the higher prices received from hay the past two years. The extent of the work now in progress on the project appears to be much greater than during any previous time during its development. The character of the work also is much better than was formerly practiced. The border system of irrigation is being quite generally used and most cleared lands are being carefully covered by straw to prevent wind erosion.

The planting of winter wheat was more extensive on the West Extension than on the main project, but losses occurred in both places. There appears to be some difference in the hardiness of varieties. Jenkins Club appears to have frozen generally. There was some early sown wheat of other varieties which promise to make a fair stand.

The practice of seeding alfalfa with rye in unirrigated land during the winter has been very general this year. The farmers who do this realize that they are taking great chances, both from frost and drought, as cold and dry weather might occur after the plants come up and before irrigation water is applied. Under such conditions there is also danger of losing the young plants from wind erosion, even though the land is covered with straw.

The preparation of land and the sowing of rye and alfalfa together continued on an extensive scale during the month of March. Light late rains supplied enough moisture to germinate much of the seed. Most fields of rye came up uniformly, but the alfalfa either germinated and perished before reaching the surface or germinated only in places. This will result in irregular stands. No great amount of dissatisfaction appears to be present on account of the loss of this extensive seeding of alfalfa, as practically everybody realized they were taking chances. Indications are that much of the land will be reseeded as soon as the irrigation water is available.

Truckee-Carson.

According to Mr. Cline's report for the month of March, the Nevada State Disease Control Service has put an additional man in the field for work on the control of infectious diseases of animals. This man and one other, in cooperation with Mr. Cline, spent several days during the month vaccinating cattle on the project against

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Truckee-Carson (continued).

blackleg and anthrax. This work is being rushed because of the open spring and the prospect for early pasture. It is the intention of the State Disease Control Service to have all live stock immunized before they are turned into the infected pastures.

During the month of March, Mr. Cline, in cooperation with the Western Office of the Dairy Division, inaugurated a campaign to encourage increased use of silos and silage by Truckee-Carson farmers. In this connection, a circular letter on the subject of silos was issued and wide distribution made of the Farmers' Bulletins on homemade silos and pit silos. It is expected that a series of meetings will be held during the month of April to continue the silo campaign.

Tieton.

Twelve calls for assistance were answered, eight office conferences were held and seven farm visits were made during the week ending March 30. One hundred sixty-eight cattle were vaccinated against blackleg.

Project farmers who did not pick their seed corn are having some difficulty in securing satisfactory seed. The office of the county agriculturist, and this office cooperating, have been able to find sufficient available seed to fill most of the needs at this time. The two carloads of seed corn which were shipped from the Yakima Valley to the corn belt have quite seriously depleted the local supply. The present price of seed is six cents per pound on the cob.

The first large wool sale of the season has been reported, 65,000 pounds selling at 55 cents. A small clip from pure bred Lincoln bucks sold at 61½ cents, averaging better than \$10 per head.

Irrigation water has been turned in the Tieton canal for domestic and stock use. None of the land needs irrigation at this time due to the thorough soaking last winter and this spring. Several new tractors have been purchased by Tieton farmers this spring and these are all at work on the land at this time.

The following notes are taken from reports recently made by Mr. Bean:

Dairying, particularly in the district served by the Harwood Cheese Factory, continues to increase in number and quality of cows and to improve in feeding practices. Of the 20 Holsteins imported to the project in February, eight were grade cows, 11 were pure bred

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

cows and one was a carefully selected registered bull. This is the first month that more pure breeds than grades have been brought to the project. The desire for quality live stock is rapidly increasing and grades particularly are carefully selected. Present prospects are that at least as many silos will be built in 1918 as in 1917.

Present indications are that 25 or more acres of field peas will be planted this year for hogging-off in connection with corn. It is probable that complete data will be secured on all this acreage. There is also an increased interest in permanent grass pastures and many conferences and calls have had to do with the methods of preparing the seed bed, grass varieties and management. Farmers are coming to realize more and more that a ration of alfalfa only is neither desirable nor economical.

Some time during the month of March was given to the development of cooperative ownership of breeding stock and to crop problems in connection with live stock production. In this respect there is a noticeable increase in the tendency to plan cropping systems for live stock production rather than for cash crops. Marked increase in the acreage of corn for silage and for hogging-off, peas for hogging-off and permanent pasture for cattle and sheep are anticipated this year.

North Platte.

Several farms were visited during the week ending March 30 at the request of the owners to inspect their hogs for cholera, but in no case was there any cholera found. Worms, mange, pneumonia, and sore mouth seem to be the principal ailments of the hogs. Several herds of hogs have been vaccinated against cholera this spring as a preventive, but there has been no cholera in the valley.

A trip was made into the eastern end of the project this week to inspect several herds of hogs which were troubled with various ailments. At one place a bunch of eleven head were vaccinated because of cholera being on the place last year.

The price of fat cattle has advanced about 50 cents per cwt. this week and the men having cattle have taken advantage of the rise and put them on the market. This rise has enabled a number to get pay for the feed they have fed. Cattle shipped by the Great Western Sugar Company here have topped the Kansas City market for the past two weeks.

About 75 per cent of the sheep on feed have been shipped out. These shipped early did not pay for the feed which they consumed, but the latter shipments have been giving a better account of themselves owing to the fact that the price has been about \$1 per cwt. better than it was two weeks ago. Some of these last sheep have

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North Platte (continued).

paid for both feed and labor.

Farm work is ahead of the season. A great deal of field work has been done and as the ground is in excellent condition the prospects for early seeding and a good crop are very encouraging.

Uncompahgre.

The greater part of the time was taken up during the week ending March 30 with club work. Assistance was given the County Agriculturist in organizing clubs and finding local dealers.

The Bull Association work has been discussed with seven farmers in the block for the vicinity of Montrose and there are now 45 cows listed for a Holstein block and in addition there are 20 cows listed for a bull club in which a Jersey bull will be used.

The work of inspecting the sheep on the project for scabies is well under way. The work is being done by the inspector placed here by Dr. Howe, of the Denver Office of the Bureau of Animal Industry. No new outbreaks have been discovered.

Farm work is well under way at present. Many onions are being dumped for lack of market. Potatoes have been purchased, f. o. b. project points by Government buyers at 60 cents. Thirty carloads were handled up to date.

The first part of the week ending April 6, was taken up with a trip to Grand Junction and Fruita, Colorado, to examine a herd of pure bred Jerseys from which one of the project farmers was interested in buying. At the same time, a trip was made to two farms where sunflower silage was being fed to dairy cows. Some of this silage was examined and found to be of very good quality. The farmers report that they are able to raise twice as much tonnage of this crop as of corn. The results from the feeding of this silage gave as good returns in milk flow as corn. From 7 to 10 pounds of seed per acre is used in planting this crop. One of the Uncompahgre project farmers will plant some of this crop this year.

Plans are being laid for the importation of a carload of grade Holstein heifers, one car of pure bred and 5 Holstein bulls. The grades will be purchased on the Salt River project, Arizona. One of the Montrose bankers is bringing in all of these animals which will be sold to local farmers at cost and on time at usual rate of interest when necessary.

The land opening on the project is being conducted during this week. About 150 filings have been made. One day was spent in conducting an excursion over the project for the purpose of showing the homeseekers the lay of the valley and the cropping system being carried out. Forty homeseekers made the trip in autos furnished

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

by project farmers and business men.

Assistance was given in locating a carload of hogs for shipment.

SOME WISCONSIN DAIRY STATISTICS

The following figures, which have been compiled from bulletin 14 of the Wisconsin Department of Agriculture, show something of the importance of the dairy industry in that State and of the growth of the industry there since 1910:

The number of milk cows increased from 1,473,505, in 1910, to 1,784,570, in 1917, an increase of 21 per cent.

In Sheboygan County, the great cheese manufacturing district, the number increased from 39,500 to 45,400, or 15 per cent; while in Waukesha County, the increase was from 32,000 to 38,000, or 20 per cent.

The greatest number of cows in any one county in 1917 were in Dane County, in which Madison is located. The number of milk cows in that county has increased since 1910 from 65,000 to 75,000, or 15 per cent.

It is estimated that in 1917 the State produced about eight and one-half billion pounds of milk, or an average of 4,780 pounds per cow, and that the average butterfat production was 181 pounds per cow. This would make the average fat content of the milk about 3.8 per cent.

The average price of milk to the producer in 1917 was \$2.10 per cwt. At this rate, the gross value of milk amounted to an average of \$100.38 per cow and its total gross value for the State was about \$179,000,000.

While dairying is the leading agricultural industry in Wisconsin, the agriculture there is nevertheless diversified, even in highly developed dairy centers. This is indicated by the following figures relating to Dane County in 1917:

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Some Wisconsin Dairy Statistics (continued)

Total land area, acres.....	769,000
Improved land area (1910), acres.....	534,000
Area in cultivated crops, acres.....	383,000
Number of milk cows.....	75,000
Number of cultivated acres per milk cows.....	5.1
Number of all cattle over 4 months of age.....	93,000
Number of swine.....	38,000
Number of sheep.....	11,000

Acreage of specified crops in 1917:

Potatoes	4,900
Wild hay.....	15,000
Tobacco.....	23,000
Cabbage.....	1,000
Alfalfa.....	5,000
Clover and timothy.....	93,000
Dried peas.....	2,000
Rye.....	3,000
Barley.....	24,000
Wheat.....	8,000
Oats.....	103,000
Corn.....	116,000

The difference between the improved land acreage (1910) and the cultivated acreage (1917) in Dane County is about 150,000 acres. It is probable that most of this area is used for pasture. On this basis, the pasture area contains about 2 acres per milk cow, although, of course, some of the pasture is used for other live stock than dairy cattle.

BREEDING SOWS IN THE UNITED STATES.

On April 8, the Bureau of Crop Estimates reported that the number of breeding sows in the United States on April 1, 1918, is estimated to be 9.5 per cent more than one year ago and 5.7 per cent more than two years ago.

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LIVE STOCK LOSSES IN THE UNITED STATES.

According to a statement issued by the Bureau of Crop Estimates on April 8, annual losses of live stock in the United States have been as follows, based on estimates made on April 1 each year, and expressed in percentages of total supply:

Losses during year.	1918	1917	10-year average
Cattle:			
From disease.....	1.82	1.94	2.00
From exposure.....	1.33	1.46	1.43
Sheep:			
From disease.....	1.98	2.18	2.44
From exposure.....	1.92	3.24	3.02
Lambs, from disease and exposure.....	4.93	6.02	5.88
Swine, from disease.....	4.21	4.86	6.75

According to these estimates, the losses during the past year have been lower in all cases than either the 1917 losses or the average losses of the past ten years.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Yuma.

During the week ending March 23, the following conditions were observed: maximum temperature 82, minimum 39, greatest daily range 43, and precipitation .53 inch.

Cotton stalks on the variety block D-17 and on Egyptian block D-22 were cut and hauled away in order to ratoon these plantings. Pima cotton was planted on plats D-25 and 26 and Durango on plats D-23 and 24 by the furrow-bed method.

A number of ornamental trees were dug from the farm nursery and transplanted to permanent positions on fields D-42 to 45, and E-42 to 45 in the form of a small park planting. This space has been retained for testing various shade and timber trees supplied from time to time by the Office of Foreign Seed and Plant Introduction.

Ornamental trees and shrubs on the grounds were given a light application of barnyard manure. Berry plantings on A10-5 were also manured.

The pruning of figs in Orchard C8 to 17 was begun.

During the week ending March 30 the maximum temperature was 89, minimum 46, greatest daily range 40.

Twenty-four acres were irrigated.

Canada field peas as green manure were turned under in Orchards A16 to 18 and B22 to 32. All hand labor was utilized in hoeing in date orchard, nurseries, and garden. Tomato plants were set out on plat A14-7.

Messrs. W. G. Wells and Roland McKee each spent a few days at the station this week.

Umatilla.

Pruning of the peach and apple orchard was completed during the week ending March 30. All trees were sprayed.

Alfalfa was spring-toothed to kill the cheat grass. The cheat grass is especially bad this year so an extra harrowing was given after the grass was well started. It was successful, although it probably damaged the alfalfa slightly.

Considerable work was done on the irrigation system and it is now in better condition than ever before.

The maximum temperature for the week was 75, minimum 30, and precipitation .04 inch.

During the week ending April 6, the maximum temperature was 71, minimum 17, and precipitation 0.

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Umatilla (continued).

A very severe wind on Sunday did considerable damage on the project. Crops of rye on newly prepared land and grain crops were blown out or cut by the drifting sand.

Monday night the temperature dropped to 25, Tuesday night to 17 and Wednesday night to 18. Practically the whole fruit crop of the project is ruined. Peaches, apricots, plums, cherries, and pears were completely destroyed and the apples severely damaged. It is doubtful if the apple crop will be 25 per cent of what it should have been. The following were the stages of blossoming of the fruit on the farm: peaches, past full blossoming; apricots, same; cherries, buds wellswollen to tips of leaves showing; plums, practically open to full blossom; pears, well budded out to pink showing; apples, just out of the buds. These freezes came before the average date of killing frost but such low temperatures were reached that the fruit was frozen without regard to the stages of blossoming.

The weather has continued so dry that the irrigation water was turned on the first of the month. Many farmers had seeded alfalfa with the hope that the spring rains would bring it up but it will be necessary to irrigate it up.

San Antonio.

During the week ending April 6, the maximum temperature was 98, minimum 53, and greatest daily range 32. A good rain, accompanied by some hail, occurred on the afternoon of the 5th. The total precipitation was .96 inch. The hail did very little damage to crops. This rain will be of much benefit to corn and will put the land into condition for seeding cotton and forage crops.

The principal field work was weeding and getting the land in shape for seeding as soon as possible after rain.

Corn made slow growth and suffered somewhat from drought. Winter oats have made very little growth during the spring on account of lack of moisture.

Messrs. Loomis, Martin, and Alfaro of the Office of Crop Acclimatization arrived the first part of the week. Mr. Lambert returned from Washington on Friday.

WESTERN IRRIGATION AGRICULTURE
Field NotesVOUCHERSPreparation of Expense Accounts

The Office of Records calls attention to the fact that the spaces on the face of Form 4 vouchers following "under written authorization from the Secretary of Agriculture, No." should be left blank, and that the number of the authorization involved should be placed in square headed "Bureau L. A. No." on the lower left-hand margin.

PERIODICALS

Field men should not certify to vouchers covering subscriptions to periodicals, which are always secured under requisition and paid for through our Bureau Property Room.

DEMONSTRATIONS ON RECLAMATION PROJECTS
Field Notes.

Uncompahgre.

Mr. Lindgren left Montrose on April 11 for a trip to Phoenix, Arizona, where he is assisting in the selection of some dairy stock for the Uncompahgre project settlers. Under date of April 16, he reported from Phoenix that one carload of heifers had been selected and that an additional carload of mature cows would be secured.

North Platte.

Mr. Unruh is absent from the project for about two weeks on a trip to the dairy sections of Wisconsin, where he is assisting representatives of the local people in locating and selecting some dairy stock for the North Platte project.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

The Minidoka Project Cattle Grazing Association was reorganized for the year on Saturday of the week ending March 23. While the exact number of farm cattle to send out is not yet known, it is expected to be about 350 head. The association herd will be assembled on April 15 and will again be grazed on the sage brush plains south of the Minidoka Dam.

Owing to the favorable weather conditions, the lambing percentage is the highest on record, being estimated at from 115 to 125 per cent. Practically all lambs are now docked with the hot docking irons rather than the knife. All who have tried this method are very enthusiastic and report that there are no losses whatever.

The range sheep that were lambed early or are to lamb very late are already on the range. The feed is plentiful but water is a difficult problem as many of the waterholes are dry.

Tieton.

Four calls for assistance were answered during the week ending April 6, ten farm visits were made, and fourteen office conferences were held. Fifty cattle, in four herds, were vaccinated against blackleg.

One day was spent with the Benton county agriculturist, Lampson, visiting farms on which peas, corn and hogs are grown. The season in the lower part of the Sunnyside project is usually long enough to allow two crops of peas or barley to be taken from the same ground in a single year. This is done by February and late July planting. No definite data have been secured from these farms as to the actual returns but the sentiment is favorable to pea growing as a supplemental crop to corn. Mr. Lampson stated that approximately one-half of the alfalfa in Benton county will have from 45 to 60 pounds of bardless barley per acre seeded with it this year. This seeding is being done to control weeds, particularly cheat, and to increase the yield of hay as well as the feeding quality thereof. It is not uncommon to secure an increased yield of one ton per acre by this practice. The return of seeding depends upon the amount of alfalfa on the ground.

The price of butter-fat in sour cream has dropped to 42 cents per pound. The price of pigs is maintained at \$16.50 per cwt. The cheese prices remains undisturbed in the Northwest. The Pacific coast condensaries have cut their price to \$2.65 per cwt. for whole milk.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

LIVE STOCK DEVELOPMENTS ON THE MINIDOKA RECLAMATION PROJECT
IN 1917.

The following has been abstracted from Mr. E. F. Rinehart's report of his work on the Minidoka Project during the year 1917. This work was carried on in cooperation with the local officials of the Reclamation Service and the usual State and Departmental agencies.

General Statement.- The year 1917 on this project was characterized by numerous calls for increased production of all food crops, eccentric changes in markets but with good prices prevailing, a cold late spring, a scarcity of good seed, periodical shortages of extra labor, and frequent publication of advice from patriotic but sometimes misinformed sources. All these conditions tended to disrupt the general plan for a diversified agriculture. Yet the majority of the project farmers realized the dangers of increased production of certain bulky and perishable crops, so that a diversified farming system was maintained better than in the adjoining districts. While there were individual cases of unbalancing caused by the disposal of live stock and the turning over of the farm to crops requiring much labor and difficult to market, this was the exception rather than the rule. The project as a whole experienced a successful and prosperous year.

The statistics used in this report have been obtained chiefly from the water users' association on the North Side unit, and the Reclamation Service on the South Side unit. Somewhat less dependence is to be placed in the data from the North Side than in those secured from the Reclamation Service, as it is believed that the former is less complete than the latter. The principal crops on the basis of acreage were alfalfa hay, 43,000 acres; wheat, 15,000 acres; sugar beets, 5,000 acres; potatoes, 6,000 acres; oats, 4,700 acres; and clover seed, 3,000 acres, all in round numbers. A total of about 7,500 acres was used for pasture. Crop reports were obtained from 2,089 of the 2,200 farms in operation on the project. The total irrigable area of the farms reported is 116,709 acres.

During the year, a total of 627 cars of hay was shipped out. This indicates the possibility and desirability of increasing the number of live stock kept.

The dairy industry.-As the dairy industry on the project was inaugurated and for several years maintained on the basis of cheap feed, a readjustment was necessary in 1917. The gravest danger lay in the sentiment of some people who were convinced that dairying was no longer profitable; but apparently the situation was correctly analyzed and the source of unprofitable dairying located before the industry was seriously injured. At the close of the year there was

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Field Notes.

Live Stock Developments on the Minidoka Reclamation Project in 1917(Cont'd)

a strong demand for good cows while the poorer types could be sold only for shipment. The total number of dairy stock on the project at the close of 1917 was 6,634, as compared with 7,044 at the close of 1916, a decrease of nearly 6 per cent. The distribution of these cows in 1916 and 1917 is shown in the following table:

	<u>1916</u>	<u>1917</u>
Number of farms carrying dairy cattle.....	1,180	1,370
Average number of cows per dairy farm	5.9	4.8
Number of farms carrying less than 10 cows each..	965	1,220
" " " " 10 to 20 cows, each.....	156	126
" " " " 20 to 30 " "	42	20
" " " " more than 30 cows each..	17	4

The above table shows the tendency to decrease the size of the dairy herds and this has been accompanied by an increase in the number of farms carrying dairy cattle. A classification on the basis of breeds is shown in the following table:

	Jersey	Holstein	Shorthorn	Unimproved	Total
Number of farms.....	13	14	3	...	30
Purebreds.....	66	68	8	...	142
Number of farms.....	312	114	161	753	1840
Grades.....	1277	769	317	3529	6634

Assistance was given in connection with the selection and importation of 22 Holstein heifers and 2 Holstein bulls. The class of dairy cattle improved during the year, due largely to the maturity of the offspring of improved sires which have been imported during the past few years and the elimination of many inferior cows. Systematic cow testing was started at the end of the year when 7 herds on the project were entered in a cow testing association centering in the Twin Falls district. A beginning was made toward the cooperative ownership of bulls. The high prices of hay did much to stimulate interest in better feeding. Stock beets were more generally fed than formerly and beet pulp and beet tops were utilized more than heretofore. The first silo on the project was built and filled and interest in silos is great. Seventy-two per cent of the dairy farms now have special pastures. The year was remarkably free from disease loss. There was a material decrease in the prevalence of abortion. Blackleg did not appear and, owing to the extensive use of satisfactory pasture mixtures, losses from bloat were light.

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Live Stock Developments on the Minidoka Reclamation Project in 1917 (cont'd)

As there were 14 different markets for the disposal of dairy products, accurate statistics of marketing are not available. The average price per pound of butter-fat ranged from 36 cents, in February, to 50 cents in December, the average for the year being about 45 cents. The cost of production in the herds where records were kept ranged from 19 to 35 cents per pound. Changes in the value of the feeds tended to increase the cost of production. The need for more cooperative marketing through cheese factories or creameries is great, and efforts are still being made in this direction. The Acequia Cooperative Cheese Factory continued operation throughout the year but its milk supply was 4 per cent less than in 1916. The average price of butter-fat for the year at this plant was 43.7 cents. The Paul cheese factory closed after an eight months run, due largely to mismanagement.

It appears that dairying will increase on the project chiefly in the direction of an increased number of farms carrying dairy cows. There are at present 719 farms where dairy cattle are not kept. Under present conditions, particularly with the shortage of labor and the uncertainty of dairy markets, dairying is considered a minor industry on most of the farms. It is, however, the principal industry on about 150 farms. Considering all things, it appears that a dairy herd ranging from 4 to 10 producing cows, the number depending upon the supply of home labor, is best suited to the average irrigated farm on the project. The interest in these small herds and in improved methods of operation is improving.

The beef industry. In spite of the high prices for feed and the uncertainty of the range, the interest in keeping beef cattle is increasing. The number of cattle kept for beef purposes increased from 2,304 to 2,579, or about 10 per cent. The distribution of these cattle is shown in the following table:

Number of farms carrying beef cattle.....	215
Average number of beef cattle per farm.....	12
Number of farms carrying less than 10 head each.....	142
" " " " 10 to 25 head " 	44
" " " " 25 to 50 " " 	17
" " " " 50 to 100 " " 	4
" " " " 100 or more head " 	8

It will be noted from the above table that very few farms carried more than 10 head of beef stock each. Somewhat less than half the beef cattle are Shorthorn or Herefords and the remainder are of mixed breeding. Two good Shorthorn herds and two good Hereford herds were established on the project during the year. The principal activities in connection with beef production had to do with cooperative

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Live Stock Developments on the Minidoka Reclamation Project in 1917(cont'd)

grazing. Two definitely organized associations were in operation in 1917 and there were two informal organizations. One association which used the range near Lake Walcott lost only 17 out of a total of 498 head, but the expenses were rather high, amounting to \$1.30 per head per month. The North Side Grazing Association had a successful year. The cattle were held in the withdrawn land north of the project, where a well was drilled on the leased section of State land in order to furnish water during the drier portion of the season. Except for the cost of drilling the well, the cost of handling the stock in 1917 was less than 75 cents per head per month. The herd contained 390 head and there were no losses other than a few from natural causes.

The future development of the industry depends very largely upon whether it will be possible for the settlers to use range lands surrounding the project. Most of these lands are now in the public domain and are used by both cattle and sheep, which means, of course, that the cattle are at a distinct disadvantage. It is estimated that the range adjoining the project, if properly handled, would furnish summer grazing for approximately six thousand head of cattle.

The swine industry.-The effects of two years of high prices for grain and relatively low prices for hogs produced a steady decline in the number of swine kept. The number of hogs on hand at the close of 1917 was 11,899, which were carried on 1,184 farms, and average of 10 head per farm; as compared with 23,610 on 1,086 farms, or about 22 head per farm in 1916. The decrease during the year amounted to almost 50 per cent. The distribution of swine on hand at the end of the year is shown in the following table:

Number of farms carrying less than 10 head each.....	772
" " " " 10 to 25 head each.....	298
" " " " 25 to 50 " "	70
" " " " 50 to 100 " "	39
" " " " 100 or more "	5

The decrease in the swine population was due almost entirely to the tendency to reduce the size of herds and, to some extent, this readjustment was desirable. In November, a campaign to increase the number of swine was undertaken and it resulted in the breeding of a large number of sows and gilts which otherwise would have been marketed. The number of purebreds and grades of the different breeds of swine on hand at the close of 1917 is shown in the following table:

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Live Stock Developments on the Minidoka Reclamation Project in 1917(Cont'd)

Breeds.	PUREBREDS		GRADES	
	Number of farms	Number of stock	Number of farms	Number of stock
Duroc-Jersey.....	8	190	206	2406
Poland China.....	7	107	214	2576
Berkshire.....	2	7	12	91
Hampshire.....	3	73	4	87
Chester White.....	0	0	6	18
Mixed breeds.....	0	0	722	6344
Total.....	20	377	1164	11522

The number of farms carrying purebreds decreased from 51 in 1916 to 20 in 1917, and the number of purebred hogs decreased from 618 to 377. The high price of wheat stimulated the planting of an increased wheat acreage and a decreased barley acreage, and this resulted in a shortage of grain feed for swine. Feeding tests were conducted with hogs on field peas and during the winter on waste feeds. The results in the winter feeding tests showed that skim milk had a value of from 70 to 79 cents per cwt., and the tests of hogging-off field peas produced gross returns of from \$117 to \$146 per acre.

Due to heavy snows and the late cold spring, 80 per cent of the March pigs were lost from thumps, and about 3 per cent as a result of being born hairless. Other than this, the hogs were freer from disease than ever before. There were no cases of hog cholera, the last outbreak having occurred in September, 1916. Treating for lice and worms has been more extensive than usual and these parasites are much less common than they formerly were. But one case of infectious sore mouth was reported. A total of 44 investigations of sickness or unthriftiness were made and the conditions were remedied. Estimates of the cost of producing 100 pounds of live weight of hogs ranged from \$9 to \$17; the average is probably between \$11.50 and \$12. The average prices paid for the 117 cars of hogs shipped in 1917 was \$13.56 per cwt. The prices ranged from \$9.75 in January to about \$16 in October.

The swine growing industry is the means of utilizing waste feeds and the number of hogs produced is being governed by this factor. Each farm has sufficient waste feed for at least one sow and her offspring, while the average farm can maintain from 3 to 5 sows. The hog is especially valuable on the dairy farm and it is generally the practice to raise them there. It is evident that swine growing will continue to be important with comparatively small numbers marketed from each farm. If each farm could send 20 hogs to market each year the production of market hogs would be

DEMONSTRATIONS ON RECLAMATION PROJECTS
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Live Stock Developments on the Minidoka Reclamation Project in 1917 (cont'd).

greater than it was in 1915 when the industry was at its highest point. The local sentiment is tending in this direction and it is believed that the industry will reach greater importance in the future than it ever has in the past.

The sheep industry.- The interest in sheep on the farms continued good. There was a satisfactory increase in the number of farms keeping sheep. The total number of sheep on the project at the close of 1917 was 24,891, as compared with 21,129 at the corresponding period in 1916, the increase being about 18 per cent. The number of farms reporting sheep increased from 289 to 482 and it is believed that the latter number is somewhat small as some farms are known to have failed to report sheep although they carried them. The distribution of sheep on the project at the close of 1917 is shown in the following table:

Number of farms carrying less than 10 head each.....	183
" " " " 10 to 25 head each.....	171
" " " " 25 to 50 " "	47
" " " " 50 to 100 " "	47
" " " " 100 to 200 " "	20
" " " " more than 200 head each.....	14

One of the most popular sized flocks is that of from 20 to 25 head of ewes. On some farms, 50 or more head can be carried to advantage. In accordance with the plans outlined at the Salt Lake Conference in June, much time was devoted to securing an increase in the number of sheep fed during the past winter and these efforts resulted in the bringing in of a large number of sheep for winter feeding. According to this plan, arrangements were made whereby farmers purchased their sheep directly from the range men and they were thus able to save approximately \$2 a head.

The number of sheep of the different breeds, both purebred and grade, are shown in the following table:

Breed.	PUREBREDS.		GRADES.	
	Number of farms	Number of stock	Number of farms	Number of stock
Hampshire.....	10	642	10	320
Lincoln.....	8	454	35	2373
Cotswold.....	2	39	17	356
Rambouillet.....	3	204	2	267
Shropshire.....	0	0	16	153
Mixed Breeds.....	0	0	379	20083
Total.....	23	1339	459	23552

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.Live stock Developments on the Minidoka Project in 1917 (cont'd).

In the cases of beef cattle and sheep on the Minidoka project, the markets are such that the success of the industry depends largely upon a breed that is popular on the adjoining ranges, and for this reason these breeds are encouraged on the project more than any others. Owing largely to the influence of the rangers, the general custom is to use only purebred rams. In all but three of the purebred flocks the owners were assisted in selecting the best individuals for breeding purposes. In 1917, assistance was given in the selection of 52 Hampshires and 95 Cotswolds.

During the summer of 1917, efforts were made to utilize ditch bank pastures and two demonstrations of this method were completed with satisfactory results. Some beet pulp was provided for the winter feeding but the main supplementary feed is mangels. The ewes went into winter quarters in such high condition that it was advocated to feed no grain until after lambing. The feeding system used with sheep on the project is better than that used with any other live stock here, although there is need for greater use of supplementary feeds in approximately one-third of the flocks. As a rule, satisfactory equipment is provided by the sheep growers. Assistance was given in planning the equipment on 30 farms during the year. The principal difficulties with diseases and pests in 1917 were had with scours (which caused heavy losses during the spring months) ticks, scab, and stomach worms. The losses were not great in any instance, except the white scours. The marketing is so closely related to that of the range sheep industry that it is impossible to separate the two for statistical purposes. In 1917, the late spring made the marketing of lambs unusually late. Most of the earlier farm lambs were marketed cooperatively and the later ones were sold with range lambs that were brought in to be fattened on beet tops. An effort was made to form a pool but too much wool had been sold before this work was started. Community shearing plants were used in two districts. The price of wool ranged from 35 to 62 cents a pound in 1917, as compared with 17 to 26 cents a pound in 1916. A total of 268 carloads of sheep were shipped as compared with 248 carloads in 1916. The average prices obtained for sheep and lambs in 1917 ranged from \$7 per cwt. in January to \$16 per cwt. in October.

The small farm flocks fit in well with diversified farming. On the 183 farms where fewer than 10 head are kept per farm, the sheep are handled through the summer at practically no expense. Where larger numbers are kept it is usually desirable to have special pastures for them, although there is enough ditch bank waste on many farms to carry from 20 to 40 head of ewes. As most of the labor required with the flocks is required in the early spring, it is not necessary to employ extra labor.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.Live Stock Developments on the Minidoka Reclamation Project in 1917(cont'd).

A cooperative grazing association was organized in 1917 and two bands of farm sheep were sent to the forest reserve. They were on the range from May 20 to October 5. The losses in one band amounted to 10.4 per cent and in the other 6.2 per cent. If the losses resulting from the turning out of old ewes and young lambs are eliminated, the average losses would have been 7 per cent. Under present conditions, it costs about 25 cents per ewe per month to handle the sheep by the cooperative grazing method. Because of the place the small flock has in the utilization of waste feeds and the profit to be made from keeping small flocks, the industry is expected to increase. The increase is likely to come more from an increased number of flocks than from increased size of flocks.

Miscellaneous.- During the year 1917, 17 public meetings were held in regard to live stock problems and 41 committee meetings were attended. A total of 34 public meetings were attended upon invitation. The total number of people met at meetings was 2282. Assistance was given in the holding of fairs at both Rupert and Burley, where much attention was successfully given to breeds and types of live stock. During the year there were shipped from the project 627 carloads of alfalfa, one of barley, two of oats, 227 of wheat, 427 of potatoes, one of peas, one of beans, 5 of clover seed, and 122 of flour. The average prices for the year were as follows: alfalfa, \$20.42 per ton; barley, \$2.57 per cwt.; oats, \$2.61 per cwt.; wheat, \$3.01 per cwt.; and potatoes, \$2.79 per cwt. Shipments of live stock and live stock products included 317 carloads of cattle, 137 of hogs, 268 of sheep, 6 of wool, and 10 of horses. A total of 624 farm visits were made during the year. Fourteen newspaper articles were published; four circular letters were issued and 328 bulletins were distributed. Assistance was given in the selection of 151 purebred sheep, 38 purebred dairy cattle, 3 purebred beef cattle and 3 pure bred hogs; assistance in the selection of grade stock included 3742 sheep, 15 brood sows, 4 cows and 8 horses. The following numbers of live stock were located for project farmers: 19,500 range ewes, 57 brood sows, and 38 work horses. During the year, 373 farmers called at the office and 1211 requests were received for information or visits.

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WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

Yuma.

During the week ending April 6, the following temperatures were recorded: Maximum 93, minimum 37, and greatest daily range 37.

Twenty-nine acres were irrigated.

The fig orchard, C8 to 17, and fallow lands B21 and E2, were plowed. Hand labor was utilized at miscellaneous hoeing.

A variety test of cotton including 30 varieties was planted on plat D16. Nearly all of these same varieties have been volunteered on the adjoining plat D17.

During the week ending April 13, the maximum temperature was 95, minimum 44, and greatest daily range 46.

An irrigation of 19 acres was made.

Fields D13 to 15 were prepared and planted to field blocks of six varieties of upland cotton that of this class may be deemed best adapted to this locality. The varieties included are: Durango #18, Durango #13, Acala, Tuxtla, Rowden, and Triumph. The breeding block of Durango cotton progenies was planted on field A24 on the 13th.

Several varieties of sweet potato plants were set out on plat A10-3.

Canada field peas growing on fields C33 and 34, which are being handled in a plat variation test, were harvested on Monday and Tuesday of this week. The weights of each plat were taken of the green material from a row fifteen feet long. There were 960 plats in all. Less than one and one-half days were needed to harvest and weigh the material, which only permits of a minimum loss to any plats in handling.

The first cutting of alfalfa on nearly all the alfalfa plats on the farm was made during the week. The dates and deciduous orchards were disked and hoed. Also various nursery and garden lands were cultivated and hoed.

Truskee-Carson.

During the two weeks ending April 13, a second series of wheat varieties were planted on the farm of Fred Sander. The varieties used in this series were the same as those reported last week except that a local bluestem wheat was planted in every third plat as a check variety, while early Baart was used as the check variety---Series I.

Barley varieties were planted April 5 and 6 on the farm of Fred Sander. The varieties used under test were: Chevalier, Coast, Nepal, Hannchen, Svanhals and Beldi.

They were planted in duplicate and a local variety was seeded every third plat as a check.

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WESTERN IRRIGATION AGRICULTURE
Field Notes.

Truckee-Carson (continued).

Onion varieties were planted March 28 in field A2 in double rows as follows:

- Double row No. 1.....Yellow Globe Danvers
2.Minn. Yellow Globe
3.....Prizetaker
4.....Yellow Globe Danvers.
5.....Southport Yellow Globe
6.....Australian Brown.

7.....Yellow Globe Danvers
8.....Yellow Flat Danvers
9.....Ohio Yellow Globe

10.....Yellow Globe Danvers
11.....Minn. White Globe
12.....Southport White Globe

13.....Yellow Globe Danvers.

14.....Silver King

' 15.....White Bermuda

16.....Yellow Globe Danvers;
17.....Yellow Globe Danvers; fertilized.
18.....Yellow Globe Danvers; not fertilized.
19.....Yellow Globe Danvers; fertilized.

The fertilizer used in rows 17 and 19 was a mixture of equal parts gypsum and acid phosphate.

Pea varieties were planted March 29 in plat A2. The varieties included in the test were: Carters Telephone, Thomas Laxton, Early Alaska, Champion of England.

Varieties of beets, carrots, turnips, parsnips, salsify, radish, and lettuce were planted next the orchard in A3 on March 30.

The following plats were seeded to crops as shown: Plat H9 and 10, barley and sweet clover; H6, barley and sweet clover; H20, wheat and alfalfa, and H19, wheat and field peas.

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WESTERN IRRIGATION AGRICULTURE
Field Notes.

Huntley.

Weather conditions were favorable for field work during the week ending April 13 and good progress was made in preparing the land for seeding.

There appears to be a slight surplus of alfalfa hay on the project and, as a result, prices are lower than during last season. Hay that was held at \$15 per ton after harvest in the fall of 1917 is selling now for \$10 and \$12. The high prices of hay last year were not attractive to feeders and stock was either marketed or shipped to other points for feeding, so that during the past winter the number of stock fed on the project was comparatively light and a large amount of hay was baled and shipped.

North Platte.

During the week ending April 13, the maximum temperature was 68, minimum 26 and precipitation 0.

A ten-inch snow fall on April 2, 3, and 4 put the soil in very good condition. This was the first precipitation since early last fall.

Men and teams were busy in the field all week. The wheat varieties, the wheat plats in the irrigated rotations, and all of the small grain plats in the dry-land rotations were seeded.

Mr. O. J. Grace, of Akron, Ohio, was at the station during the latter part of the week, looking after the seeding of small grain in the dry land rotations.

San Antonio.

During the week ending April 13 the maximum temperature was 77, minimum 41, and greatest daily range 29. The rain, the latter part of the preceding week, put the soil in good condition for seeding. Cool, cloudy weather prevailed throughout the week. This lessened evaporation and gave the moisture an opportunity to go into the soil before being evaporated.

All hands were engaged in seeding practically throughout the week. All cotton, including that in the rotation experiments, in other cultural experiments, and progenies and increase plats, was seeded. Sorghum and Sudan grass were seeded in the rotation experiments. Two acres of Sudan grass was seeded for use on the steer pasturing experiment. Sorghums were seeded in a variety test and several varieties of field beans were seeded. The corn variety test for the Texas Field Crops' Association was put in on field A3.

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WESTERN IRRIGATION AGRICULTURE
Field Notes

Umatilla.

During the week ending April 13, nineteen acres, consisting of cover crops, alfalfa and orchard were irrigated.

The maximum temperature was 70, minimum 31 and precipitation .02 inch. The weather continues cool and windy.

The following table is a summary of the lysimeter results from the end of the crop season 1917 to the beginning of the crop season 1918:

Lysimeter No.	Soil Type	Crop.	Precipitation	Percolation	Percolation as % of precipitation
			Inches	Inches	
1	Medium coarse sand	No crop	5.39	5.39	100.0
2	do	Vetch	5.39	5.08	94.3
3	do	First year alfalfa	5.39	2.26	41.9
4	do	Old alfalfa manured	5.39	1.82	33.8
5	Medium sand	First year alfalfa	5.39	2.93	54.4
6	Coarse sand	First year alfalfa	5.39	3.15	58.5
7	Silt (Stanfield)	First year alfalfa	5.39	....	....
8	Silt loam (Butter Creek)	First year alfalfa	5.39	....	....

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

A part of the cattle of the North Side Grazing Association were taken to the range during the week ending March 30. Approximately 350 head of cattle are to be grazed by the association. The stock will be grazed on the sagebrush range north of the project which has been leased from the Department of the Interior and enclosed with a three wire fence. Water is supplied from a well.

A school house meeting was held each night during the week. With one exception the attendance was good, the average for the six meetings being 22.

Mr. Chester, who graduated from the University of Illinois in 1907, has been employed as county agent in Cassia County. For the past eight years Mr. Chester has been farming near Wendell, Idaho.

A third cattle grazing association with 29 members, who own approximately 459 head of range cattle, was organized at Jackson during the week ending April 5.

The second annual Fat Stock Show was held at Salt Lake Union Stock Yards on April 4, 5 and 6. As a whole, the quality of the stock was much better than that shown a year ago.

The registered bulls offered for sale were much better than those sold last year, although there was much disappointment because of the fact that only yearlings were offered. This was explained by the breeders as being due to the demand for this class of stock which has been so good that only the younger animals were left on hand. Considerable difficulty in meeting the requirements of the Registered Range Bull Law which goes into effect in Idaho next September, is anticipated.

North Platte.

Under date of April 6, Mr. Unruh reports that the prospects for a large pig crop on the project this year are very encouraging for up until this week the weather has been warm and dry and hogs are in very good condition. The size of the average litter is above normal and if conditions remain at all favorable the pig crop ought to be very large.

Farm work is progressing rapidly and a great deal of field work has been done, but this week the weather has been very blustery and practically no work has been done in the fields.

The feed lots are being emptied rapidly, due to the higher prices and also to the desire of the farmers to do more field work. A much larger per cent of the sheep have been shipped than of the cattle. The quality of stock that have been shipped recently has been excellent. The markets at Kansas City, St. Joe, and Chicago have all been topped this month by sheep or cattle shipped from this section.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued)

The condition of live stock all through the valley is excellent. A very few calls have been made during the week at the request of the owners for hog ailments and these were found to be only very minor troubles. There is very little trouble with sore mouth among the little pigs, no more trouble with pneumonia, and no hog cholera.

A considerable degree of interest is being shown among the farmers in dairying and arrangements have been made to go to Wisconsin next week to select high grade cows and a registered bull to be brought on to the project and sold to the farmers here at cost. The Scottsbluff Creamery Company are buying the cattle for the farmers and selling them at cost.

The entire week ending April 13 was spent in securing a car load of Holstein cows and a registered Holstein bull to be sold to the farmers on the project at cost. The Scottsbluff Creamery Company is interested in building up the dairy industry here and as there are a number of farmers who want these good cows, but yet will not put up the money to pay for them without seeing them, the Creamery Company told these men that they would buy the cattle and bring them onto the project and let the farmers have them at cost. Mr. Herbert Bowen, a farmer living south of Scottsbluff, was chosen to make the trip to Wisconsin and pay for the cattle and care for them in transit on the way back to Scottsbluff.

Mr. Bowen and Mr. Unruh left for Wisconsin on Monday evening April 8, and arrived in Watertown, Wisconsin, on Wednesday noon, where they were joined by Prof. Propps, dairy extension specialist for this State, who assisted in selecting the cattle.

Thursday, Friday and Saturday were spent in buying the cattle, getting one or two at a farm. The bull that was bought is five months old and a son of Beauty Pieterje Prince, the famous herd bull at the Carnation farms. His dam is a 22.79 pound cow. This bull was bought on a special order for Everet & Son, dairymen east of Scottsbluff. There were bought 24 cows, averaging in age from two to six years, all high grade and heavy in calf to a registered Holstein bull. The price paid averaged \$130 each.

The cattle were shipped, after being tuberculin tested, from Watertown on Monday and will probably arrive in Scottsbluff about Saturday of this week. They will be kept by the Creamery Company for two or three days and then turned over to the farmers at cost.

The part of Wisconsin where the cattle were bought is strictly a dairy country. The farms averaged in size from forty to eighty acres, and practically every farm has a large stone or brick house, a silo, and a large stone-foundation barn. The country is densely populated and the people are well off. The land is valued at from \$300 to \$400 per acre but from the looks of the soil the price

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Field Notes.

North Platte.

is too high, for the top soil is about six inches thick and this is underlaid with gravel and rock, yet it is highly productive because every farm has live stock and the manure goes back onto the land.

Alfalfa and corn are the principal crops raised, along with small fields of oats for bedding and small grain. Every bit of corn raised is cut while green and put into the silo and the hay is all put into the barn or under some kind of cover as soon as put up.

Truckee-Carson.

Considerable time was spent during the week ending April 13 in cooperation with the State Disease Control Service in vaccinating against anthrax and blackleg. Practically the entire valley is so badly infected with these diseases that all cattle not confined to feeding corrals must be immunized or heavy losses are almost certain to follow. Preliminary arrangements for most of such work in the valley are made through this office. For vaccinating against blackleg, germ-free blackleg filtrate is used. For vaccinating against anthrax the numbers 1 and 2 anthrax vaccine are used. Last year several herds were immunized against anthrax by the double treatment, that is the serum-virus treatment, but this method was not generally satisfactory, the fault no doubt being due to the products used as a great many of the animals treated died of anthrax.

Some time has been spent during the past week with the state sheep inspector in an endeavor to detect all cases of sheep scab on the project. One flock was found to contain several badly infected sheep previous to the inspector's visit to the project. These infected sheep were purchased from a large band imported onto the project last summer. Several ranchers purchased sheep from this large band and considerable time was spent examining these other flocks for sheep scab. So far the outbreak of sheep scab seems to be confined to the one flock mentioned. Sheep shearing is under way now and a great many of the ranchers will dip their sheep after shearing as a precautionary measure against scab.

Mr. Pike of the Western Dairy Division and Mr. Scott, of the State Extension Staff, visited the project on the 11th. in the interest of silos. A number of the farmers most interested in silos were visited and a meeting was held in the Harmon district. Much interest was shown. Mr. Pike used charts in a discussion

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Field Notes.

Truckee-Carson (continued).

of the use and values of silage for feeding dairy cattle. A stereoptican lecture was also given, using the lantern slides on home made silo construction sent to this office some time ago. A meeting the following night was planned in another district but because of its conflict with the Liberty Loan meeting it was thought best to call it off. Mr. Pike and Mr. Scott left the project April 13.

HAIRLESSNESS IN PIGS.

The Montana Experiment Station has issued two publications bearing on the question of hairlessness in pigs and on the relationship of this phenomenon to goiter, both in pigs and in other domestic animals. The station has been requested to send copies of these publications, Circular 71, "The Cause and Prevention of Hairless Pigs", and Bulletin 119, "Hairlessness and Goiter in New-born Domestic Animals", to each of the field men

The author of the publications has tried feeding 2 to 3-grain daily doses of potassium iodine to sows for a part of the gestation period, and, while he states that "an element of error is possible" in the trials so far made, he recommends this treatment as a preventive. The summary of each publication is as follows:

1. Disturbance of the function of the thyroil gland appears to be the immediate cause of hairlessness in pigs, lambs, and calves, and of weakness in colts.
2. The enlarged thyroid gland are very deficient in iodine, which has been demonstrated to be the essential element for the proper functioning of the gland.
3. Iodine supplied to the female breeding stock during gestation is apparently effective as a preventive of goiter in the new-born.
4. We feel justified in advocating the feeding of iodine to pregnant domestic animals in sections of the Northwest where goiter is prevalent.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

SUGGESTIONS REGARDING WOOL POOLS

Early in April Mr. Rinehart sent an inquiry to the office with reference to some matters affecting the proposed organization of a wool pool on the Minidoka Project. The inquiry was referred to the Bureau of Markets under date of April 8 in the following letter signed by Mr. Farrell:

"During the season of 1917, a representative of this office on the Boise Reclamation Project, Idaho, assisted a small group of farmers in organizing and conducting a wool pool. The results obtained were sufficiently satisfactory so that some of our other men are now endeavoring to organize similar pools on other Reclamation Projects.

"In this connection, I am in receipt of a letter from Mr. E.F. Rinehart, our representative on the Minidoka Reclamation Project, Idaho, in which it is stated that a group of farmers in the Twin Falls district, Idaho, have so far been unable to secure any bids on the wool which they pooled in 1917. Mr. Rinehart states that it is the opinion of these farmers that there is an organized effort among wool buyers to oppose cooperative marketing, and this belief is causing the farmers on the Minidoka project some concern. They hesitate to proceed with their plans for the operation of a pool for their 1918 clip if there is any reason for believing that organized opposition to cooperative selling would make it impossible for them to dispose of their wool.

"Any information bearing on this question which you can furnish will be very much appreciated, as will also any suggestions which you may make regarding the matter."

Under date of April 20, the Chief of the Bureau of Markets replied as follows:

"Your letter dated April 8, requesting information relative to cooperative sales of wool by wool growers associations and available markets for wool, has been received.

"It is our desire to encourage and assist as much as practicable all efforts by farmers to organize for the cooperative selling of wool, and while there is no definite plan of procedure we can suggest, yet the methods of cooperation are very similar. It may be necessary to arrange the details of handling to meet existing conditions in different localities. The more simple form of organization is recommended whereby each wool grower states the number of fleeces he will contribute so that a suitable warehouse can be leased to handle the shipments, and a sales manager selected to receive and keep an

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Field Notes

SUGGESTIONS REGARDING WOOL POOLS (continued)

accurate record of the wool shipped in by the various members. The usual commission for services rendered by a sale manager ranges from 1-1/2 per cent to 2 per cent of the gross value of the wool, each grower being charged his proportionate share.

"Cooperative sales of wool have been held in many districts throughout the United States, and many systems of selling have been tried. It seems that the sealed bid plan whereby the growers establish a reserve bid, is the most feasible and practicable one, as it affords the growers the privilege of rejecting any or all bids. This naturally protects the grower from any effort on the part of the buyers to combine and fix prices.

"Referring to the list of dealers in Boston, Philadelphia, Chicago, and St. Louis markets, recently sent you, it is suggested that Mr. Rinehart, representative on the Minidoka Reclamation Project, address a communication to any of these concerns stating the quantity of wool they have for sale and their desire to dispose of the same outright or to consign the lot.

"In addition to the names sent you, it might be advisable for them to communicate with Mr. A. C. Bigelow, in charge of the Philadelphia Public Wool Auctions. Mr. Bigelow's address is Front and Chestnut Streets, Philadelphia. The Public Wool Auctions has just been organized. The first sales will be held June 12 and every two weeks thereafter. The organization is made up of members of the Philadelphia wool trade who act as brokers on the exchange.

"It is hoped that the information given above will aid in assisting cooperative sales of wool on the different reclamation projects, and that you will not hesitate to call upon us when you have need for further information."

The lists of the wool dealers in Boston, Philadelphia, Chicago and St. Louis referred to in Mr. Brand's letter were sent, under date of April 23, to the field men who are likely to be actively interested in wool pools this season.

WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

Yuma.

During the week ending April 20, the maximum temperature was 90, minimum 39 and greatest daily range 42.

Eleven acres were irrigated. Much cultivating and hoeing of orchards and row crops was accomplished throughout the week. All alfalfa hay of the first cutting was hauled and stacked.

A variety planting of velvet beans was made on borders C-25 and C-26. Also, a group of Tuxtla cotton progenies were planted as a breeding block on borders E-2.

Scottsbluff.

During the week ending April 20 the weather was stormy and cold, the maximum temperature being 48, minimum 28 and precipitation .5 inch.

Whenever the weather would permit, the men were kept busy in the field. On stormy days they shelled corn and fanned grain.

The oats were seeded in the irrigated rotations.

The old machinery that was of no further use on the station was taken to Mitchell and sold at public sale.

Umatilla.

The maximum temperature, for the week ending April 20, was 81, minimum 26, daily range 50, and precipitation 0.

W. L. Powers, Professor of Irrigation and Drainage, who is to represent the Oregon Agricultural College in the cooperative work at the Farm, spent one day here familiarizing himself with the work. Future plans were discussed but no definite changes were made, it being thought better to wait until the summer conference.

The following S. P. I. material was planted:

1	22468	<i>Corylus avellana</i>
1	22472	" "
1	22480	" "
2	37955	<i>Crataegus pinnatifidia</i>
1	32882	<i>Cydonia oblonga</i>
1	40766	<i>Iris ensata</i>
1	43698	<i>Lonicera maackii erubescens</i>
1	22982	<i>Loropetalum chinense</i>
1	41572	<i>Malus sargentii</i>

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Umatilla (continued).

2	26614	Populus berolinensis
4	22363	Populus simonii f. fastigiata
3	38232	Populus sp.
1	32751	Prunus domestica
1	33234	Prunus domestica
1	32669	Prunus spinosa x domestica
1	32673	Prunus spinosa x domestica
1	32831	Prunus densa.

The borders in field B2 which were graded last fall did not irrigate properly so they were disked, spring-toothed and re-leveled.

The maximum temperature for the week ending April 27 was 81, minimum 25, and no precipitation. The minimum of 25 was on Thursday night and was followed on Friday night by a minimum of 28. The few apples which survived the freezes of three weeks ago were in blossom and were practically all killed. The Rome Beauties were hardly open and appear to have withstood the cold fairly well only about half of the fruit being killed.

Twenty-four acres were irrigated. The cover crops in the orchards and on the cultivated ground are making a very good growth.

During the year 1917, 6,200 acres were irrigated on this project, the average depth of water used being 6.34 acrefeet. During the peak periods, the canals were operated at practically their maximum capacity. The estimate is that this acreage will be increased about 20 per cent in 1918, so much greater economy in the handling of water will be necessary. The project will be placed on a strict rotation basis as soon as the water requirements become high. The lower part of the farm will have 6-acre inches once in two weeks, and the upper part 5-acre inches once in nine days.

San Antonio.

During the week ending April 20, the maximum temperature was 92, minimum 47 and greatest daily range 39. The total precipitation, which came as one shower, amounted to .35 inch.

The principal field work during the first part of the week was weeding. All corn, and milo in the rotation experiments, were cultivated after the shower. Soil samples were taken on oat, milo and sorghum plats in the rotation experiments.

Several varieties of castor beans were seeded on Friday. The San Antonio Chamber of Commerce has contracted for 5,000 acres of this crop for the War Department and there is a good deal of

WESTERN IRRIGATION AGRICULTURE
Field Notes.

San Antonio (continued).

local interest regarding its production. A sufficient area was seeded of the variety being seeded by farmers to obtain fairly reliable yield data.

All crops seeded the preceding week are emerging and the prospects are good for satisfactory stands of all crops, with the possible exception of the sorghum varieties in field C6.

During the week ending April 27, the maximum temperature was 88, minimum 44, and greatest daily range 34. The total precipitation, which came as one shower, was .82 inch. This rain was much needed by all crops. Corn had begun to roll badly and was making very slow growth.

The principal field work was weeding. The rotation plats, orchards and general fields, were weeded. Soil samples were taken on the cotton plats in the rotation experiments. Corn on the rotation plats, and on field C6, was cultivated after the rain. Cotton on field C5 was also cultivated. A fence was constructed around the oats on field C3 to be pastured off with steers.

Belle Fourche.

The maximum temperature for the week ending April 27 was 70, minimum 22, and precipitation .56 inch.

The small grains in field B, dry land rotations, the small grains and alfalfa in field A, irrigated rotations and all grains in the variety test, both on dry land and irrigated land have been seeded.

The ground is in good condition for the planting of the remaining crops.

About 2,500 bull pines have been planted between the cottonwoods in the irrigated forest.

PERSONAL

Mr. Farrell left Washington April 26 for a trip to the North Platte, Minidoka, Boise, Umatilla, and Tieton Projects.

Mr. R. E. Blair arrived at Washington April 30 for the purpose of reporting on the work of the Yuma Station during the past year.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Uncompahgre.

The greater part of the week was taken up with the work of forming a bull association block near Montrose. Mr. Kehrlie, of the Western Dairy Office, was on the project and assisted with this work. Forty-three cows are now signed up for the Montrose block, and it is the plan to include as many of the bull clubs on the project within the association. In this connection visits were made to fifteen farms.

The Government potato buyer has purchased forty carloads of potatoes from Montrose and Delta counties. Most of these were purchased from project farmers.

The latter part of the week a trip was started to Phoenix, Arizona for the purpose of purchasing cows for project farmers under the Home State Bank of Montrose. The cows are to be purchased by the bank and sold at actual cost to the farmers.

The whole week was taken up in locating and selecting dairy cows. Forty-six head of young cows were purchased at an average cost of \$110.65. The overhead has not been determined but it is estimated that it will amount to \$22 per head. The quality of the cows found in this section adjacent to Phoenix, Arizona is of the best. There are many being sold on account of the money being made from the growing of cotton.

The cows purchased were from three to four years old. Assistance in the location of the animals was had from the County Agriculturist, Mr. W. A. Barr, at Phoenix, and Mr. F. R. Sanders, of Chandler, a point twenty-six miles from Phoenix. There are still a few good animals for sale in that locality which can be had at very reasonable prices.

North Platte.

The forepart of the week ending April 20 was spent at the State Farm at Lincoln, and in making the trip from Lincoln to Mitchell. The latter part was spent in general live stock work.

There has been considerable moisture this past week and farming conditions are ideal. A large acreage of small grain has been sown and some sugar beets have been planted. With favorable conditions for the next ten days most of the seeding will be finished.

The live stock conditions could not be better than they are at the present time. There are no diseases of any kind among any of the live stock on the project and stock of all kinds are thriving.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes

North Platte (continued).

We have had no storms this spring that have been bad on stock and while we have had a few chilly days we have had no wet, driving rains, like we sometimes have in this part of the State.

The pig crop seems to be unusually large, the average being above normal. A large number of the spring pigs are now out on alfalfa pasture and are doing splendidly.

Considerable interest is being shown in dairying among the farmers of the project. Not in commercial dairying, but in keeping a few good milk cows so as to furnish some skimmed milk for the pigs and butter-fat for sale. Milk records are being kept by some of the men who have never kept records before and this will eventually result in weeding out some of the poor cows.

Tieton.

Four farm visits were made during the week ending April 13, three calls for assistance were answered and three office conferences were held. Sixty-four cattle in two herds were vaccinated against blackleg. Three and one-half days were spent in the office. A meeting of the Yakima Valley Potato Growers at Toppenish was attended on Saturday afternoon.

Many of the Tieton cattle went on the spring range this week. Men who have ridden over the range report that the grass is in the best condition that it has been for a number of seasons. The snow line, however, is very high and the later range is liable to be dry. Although this office has vaccinated a number of cattle this spring, owners themselves have vaccinated an increased number with their own outfits and with the Government vaccine furnished through this office. It is probable that the percentage of vaccinated animals turned out this year will be unusually high.

Truckee-Carson.

During the week ending April 20, there were received forty-two calls for assistance and twenty visits were made to farms. Considerable time was spent in cooperating with the State Disease Control Service in vaccinating against anthrax and blackleg. This work will continue for the next two or three weeks.

The subject of community pastures has received considerable attention recently. The Reclamation Service proposes to place a stock fence around about twenty-four sections of grazing land in the neighborhood of Carson Lake, southeast of Fallon about twelve

THE HISTORY OF THE UNITED STATES

CHAPTER I

The first part of the history of the United States is the history of the colonies. The colonies were first settled by Englishmen in 1607. They were at first dependent on England, but they gradually became more independent. In 1776 they declared their independence and became a new nation. The new nation was at first a weak one, but it grew stronger and stronger. It fought a war with England in 1775-1781 and won. It then became a more powerful nation. It fought a war with France in 1793-1800 and won. It then became an even more powerful nation. It fought a war with Spain in 1808-1812 and won. It then became a very powerful nation. It fought a war with Mexico in 1846-1848 and won. It then became a very powerful nation. It fought a war with Great Britain in 1861-1865 and won. It then became a very powerful nation. It fought a war with Spain in 1898 and won. It then became a very powerful nation. It fought a war with Japan in 1905 and won. It then became a very powerful nation. It fought a war with Germany in 1914-1918 and won. It then became a very powerful nation. It fought a war with Japan in 1941-1945 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 1945-1991 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 1991-1999 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 1999-2001 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2001-2009 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2009-2017 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2017-2021 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2021-2025 and won. It then became a very powerful nation.

The second part of the history of the United States is the history of the nation. The nation was first founded in 1776. It was at first a weak one, but it grew stronger and stronger. It fought a war with England in 1775-1781 and won. It then became a more powerful nation. It fought a war with France in 1793-1800 and won. It then became an even more powerful nation. It fought a war with Spain in 1808-1812 and won. It then became a very powerful nation. It fought a war with Mexico in 1846-1848 and won. It then became a very powerful nation. It fought a war with Great Britain in 1861-1865 and won. It then became a very powerful nation. It fought a war with Spain in 1898 and won. It then became a very powerful nation. It fought a war with Japan in 1905 and won. It then became a very powerful nation. It fought a war with Germany in 1914-1918 and won. It then became a very powerful nation. It fought a war with Japan in 1941-1945 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 1945-1991 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 1991-1999 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 1999-2001 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2001-2009 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2009-2017 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2017-2021 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2021-2025 and won. It then became a very powerful nation.

The third part of the history of the United States is the history of the world. The world was first discovered by Christopher Columbus in 1492. It was at first a weak one, but it grew stronger and stronger. It fought a war with England in 1775-1781 and won. It then became a more powerful nation. It fought a war with France in 1793-1800 and won. It then became an even more powerful nation. It fought a war with Spain in 1808-1812 and won. It then became a very powerful nation. It fought a war with Mexico in 1846-1848 and won. It then became a very powerful nation. It fought a war with Great Britain in 1861-1865 and won. It then became a very powerful nation. It fought a war with Spain in 1898 and won. It then became a very powerful nation. It fought a war with Japan in 1905 and won. It then became a very powerful nation. It fought a war with Germany in 1914-1918 and won. It then became a very powerful nation. It fought a war with Japan in 1941-1945 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 1945-1991 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 1991-1999 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 1999-2001 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2001-2009 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2009-2017 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2017-2021 and won. It then became a very powerful nation. It fought a war with the Soviet Union in 2021-2025 and won. It then became a very powerful nation.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Truckee-Carson (continued).

or fourteen miles. This territory has been open to the public until now, as a free grazing ground, but has been very largely monopolized by large cattle owners, who have ranches near by. The object of the Reclamation Service in fencing this territory is to apportion the pasturing facilities among the homesteaders of the project according to their needs. It was expected that this community pasture would be fenced for the opening of the present pasturing season. The fencing, however, will not be completed before the middle of the summer. In order that the small homesteaders might avail themselves of this grazing territory and feel some security in placing their animals on this pasture, a meeting of the homesteaders was called on the 20th. for the purpose of organizing a grazing association similar to the grazing associations organized in other projects. According to the plans of the association the cattle will be placed on this open grazing territory in charge of a competent herder, and a small fee per head for animals entered will be charged to meet expenses. After the territory has been fenced the Reclamation Service will take charge.

The local grazing association has appointed a committee to confer with the Reclamation Service regarding the details of the proposed community pasturing, such as irrigation, fees, allotments of cattle per acreage of homestead, limitations of pasturing season, bulls, etc.

REGULATION OF WOOL MARKETING.

The following statement with regard to the marketing of wool has been obtained from the Bureau of Markets on May 4, 1918:

"The Government through the War Industries Board, has definitely fixed the price of wool, taking as a basis the scoured value in Boston on July 30, 1917. The arrangement was arrived at by conferences between the representatives of the growers, the dealers, and the Government. It is desired that the wool shall as nearly as possible follow its usual channels, and to this end the growers have agreed to deliver to the dealers the new clip and the dealers have agreed to distribute it upon a definite basis of compensation, conforming to the Government direction as to its distribution.

"The Government has not obligated itself to buy the clip but does have first call upon any portion it requires, and it will allot the balance of the wool to mills throughout the country, such balance to be made use of for civilian purposes. The Boston prices as of

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Field Notes

REGULATION OF WOOL MARKETING (Continued)

July 30, 1917 are net to the grower except that he has to pay transportation charges to the Atlantic seaboard and interest on such advances as may be made to him at the time of shipment. The dealers, it is understood, are arranging to make a blanket advance to the grower at the time the wool is shipped, the balance of the price of the wool to be paid to the grower when the wool is sold and delivered by the dealer.

"Speculating or any form of buying directly or indirectly is to be prohibited. The dealers in wool will be licensed by the Government.

"A method of handling wool in the fleeced-wool sections and other sections where the clips are small is now being worked out which will probably allow selling in small lots. The full schedule of prices will be distributed by the wool trade associations or can be obtained from the Wool Division of the War Industries Board.

"Mr. Louis Penwell, of Helena, Montana, has been appointed Chief of the Wool Division, War Industries Board, Council of National Defence."

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES

Huntley.

During the two weeks ending April 27, the maximum temperature was 73, minimum 18, and precipitation .42 inch.

Seeding of small grains on the dry land was completed and land for seeding these crops under irrigation was prepared and part of the seeding done.

Two hundred plants of Ulmus pumila were received from the Foreign Seed and Plant Introduction Gardens, Chico, California. These were set out in the grounds by the buildings and in the Picnic Park, adjacent to the Experiment Farm.

Weather conditions to date have been very favorable for spring planting and all crops are getting in in good condition.

The sugar beet acreage in the Billings factory district will probably amount to not more than 10,000 acres, while the factory has a capacity for hauling 30,000 acres.

At the Experiment Farm no difficulty has been experienced this season with sows farrowing hairless pigs. Most of the litters are of good size and healthy. The brood sows were given potassium iodine, as recommended by the Montana State Station, and while it is possible that trouble from hairless pigs might not have occurred had the iodine not been given, it seems probable that this treatment was effective in preventing this trouble, since a number of these same sows farrowed hairless pigs in 1917 when this treatment was not given.

Irrigated Relations.

The following crops were seeded: Five plats of spring wheat in Field K on April 19; two plats of flax and five plats of alfalfa in Field K on April 25.

The ground for seeding oats and sugar beets is being disked and harrowed, to be planted the first of the week beginning April 29.

On April 23 fall pigs were put on the alfalfa pasture in rotations 67 and 69. The average weight of the five pigs on rotation 67, was 99 pounds; of the five on rotation 69, 100 pounds.

Scottsbluff.

During the week ending April 27, the weather continued very cold and stormy, the maximum temperature being 45, minimum 18, and precipitation .8 inch. It snowed or rained every day.

The men were kept busy fanning grain, sorting potatoes, hauling manure, crowning alfalfa, and fencing the 800-acre pasture.

Sixty-six, 80 pound shotes, were bought for the alfalfa pasturing experiments.

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Yuma.

During the week ending April 27 the maximum temperature was 92, minimum 43, and greatest daily range 46.

Forty acres were irrigated.

The farm borders, grounds, and fig orchard are being hoed. Several fallow plats and pecans. on F-1 were disked. A15-2 and E7 and 8 were plowed.

One-half of C36, field pea variety block, was harvested and green manure weights recorded. The balance of the plat will stand until maturity.

All irrigated nursery and small plats were cultivated; also cotton on D22 to 26.

Umatilla.

During the week ending May 4, the maximum temperature was 86, minimum 32 and precipitation 0.

Five varieties of cotton were received from the Oregon Experiment Station and planted in field B3. They are Acala, Columbia, Egyptian, Lone Star and Trice.

A small quantity of annual white sweet clover developed by the Iowa Experiment Station was planted.

The pasture grasses grown last year were reseeded to thicken the stand. Two additional grasses and five mixtures were sown.

Work of turning under the cover crop was begun preparatory to spring planting.

San Antonio.

During the week ending May 4, the maximum temperature was 74, minimum 51, and greatest daily range 15. The entire week was cloudy with frequent showers. The total precipitation was 4.64 inches, 2.81 inches of which occurred on the night of May 4.

On account of weather conditions and the wet soil, no field work was possible. Corn is making rapid growth and oats are recovering somewhat from the effects of the extended drought. The weather has been cold for cotton. Weeds are growing rapidly and promise to become serious if cultivation is not possible soon.

Labor was utilized in doing miscellaneous work about the buildings and grounds and in repairing and constructing fences.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.APPOINTMENTS.

A supply of a new form of appointment request blank is being sent to each of the field stations. On the back of this form will be found full information concerning the present requirements in regard to personnel changes.

The appointing officers are insistent that all the information called for shall be furnished with the application, and failure to comply therewith will result in holding up appointments.

Appointment request blanks heretofore sent out should be discarded.

NOTE: Since the above mentioned form was made up and mailed instructions have been received to withdraw the clause limiting requirements 4, 5, 6, 7 and 8, under "Citizenship" to persons of foreign birth and foreign parentage. Therefore, all the information called for under this heading should be supplied, whether the appointee is native born, foreign born, or of foreign parentage.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES

Shoshone.

During the week ending March 23, 1918, 11 farm visits were made, 71 office calls were received, 14 other conferences were held, 3 milk samples were tested and 2 cattle inoculated for blackleg.

A good many call were received this week regarding grass pastures. There seems to be a growing sentiment here in favor of grass pastures. The assistance given the farmers by this office in obtaining seed, seems to help a good deal in getting the farmers to seed the proper mixture.

Some time was given this week to arranging for the shipment of a car load of stock hogs. Most of the farmers who had fall pigs were very anxious to dispose of them because they did not consider it desirable to feed wheat and any other concentrated feed was difficult to get. The hogs were sold for \$15 per cwt. to an agent of a hog cholera serum plant, though he succeeded in getting various commissions out of some of the men.

Arrangements were made for the cooperative shipment of a car of cattle.

Minidoka.

The demonstration of wintering fall pigs on the farm of J. M. Stoddard & Son was completed during the week ending April 13. This demonstration was started on December 10 and completed April 11.

Feeds were used in different combinations as is shown in the following tables of the daily rations:

First month.- 13 pounds smutty wheat, 13 pounds alfalfa hay, 15 pounds sugar beets, 70 pounds skim milk.

Second month.- 6 pounds smutty wheat, 12 pounds alfalfa hay, 30 pounds cull potatoes, 60 pounds skim milk.

Third month.- 4.6 pounds chopped alfalfa, 1.5 pounds beet syrup, 30 pounds cull potatoes, 25 pounds kitchen slop, 40 pounds skim milk.

Fourth month.- During this period the pigs were at large a part of the time and picked up considerable waste feed in addition to which they were fed 100 pounds of cull potatoes and 75 pounds of skim milk per day.

Everything that has a market value is charged with the same, the prices being as follows:

Smutty wheat, \$2.50 cwt., alfalfa hay, \$15 per ton; chopped alfalfa, \$18 per ton; beet syrup \$29.00 per ton; sugar beets \$7.50 per ton; and cull potatoes, \$50 cents per cwt.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes

Minidoka (continued).

On December 10 the average weight was 35.4 pounds, and on April 11, 84 pounds. At the market prices the shotes increased \$108 in value on \$38 worth of feed. With the combination of waste feeds used less than 600 pounds of grain were used to produce 1011 pounds of gain.

During the first month the pigs gained an average of .52 pounds per day; second month, an average of .27 pound; third month an average of .41 pound, and the fourth month, an average of .35 pound. The first month was the most profitable. The third month stood second, the fourth month third, and the second month last.

As a comparison on January 5 a pure bred barrow, weighing 168 pounds was cut out and fed only smutty wheat. On March 11 this hog was slaughtered. On that day he weighed 270 pounds, thus in 65 days he had gained 102 pounds. A total of 495 pounds of smutty wheat had been fed, or 485 pounds of grain for each 100 pounds of gain. At the market price on that date, the value of the gains was \$15.30. The market price of the damaged grain was \$2.50 per cwt., yet the price received by feeding was \$13.16 per cwt.

The demonstration is of interest from two standpoints, first to show the return that can be secured from such feeds as usually go to waste, second to show that each farm can carry a small number of pigs to advantage. It should be noted that during the second month the pigs were underfed, hence the profits were less. It is also interesting to note that the profits depend upon having pigs of the right type and in feeding a ration that is well balanced.

The silo excursion of the Canyon County Farm Bureau on the Boise Project was accompanied during the week ending April 20, and assistance was given in explaining the different types of silos and the value and uses of silage on the farm.

The Idaho law which prohibits the grazing of sheep on range that has previously been used for cattle, has recently been declared constitutional by the U. S. Supreme Court. Under this ruling it is possible to segregate sections of the Public Domain for cattle. It is realized, however, that extreme care will have to be taken in order not to injure the sheep industry. In this section it can be done in a way that would injure none but the sheep outfits that do not feed hay on the farms during the winter.

A difficulty in the successful pooling of the farm wool has arisen because of the lack of uniformity in the farm sheep. Some difficulty is being met also because of the lack of uniformity in the packing of the wool as well as the difference in the classes and grades. Because of the different kinds of sheep kept and the fact that different classes of wool sell for different prices has caused a disagreement to take place. The men with the best quality of wool insist that bids be taken on different kinds and payment be made accordingly. The others insist that only bids to cover the entire pool be considered.

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DEMONSTRATIONSON RECLAMATION PROJECTS.

Field Notes.

North Platte.

On Saturday of the week ending April 27, the load of dairy cattle imported from Watertown, Wisconsin, by the Scottsbluff Creamery Co. were sold at Scottsbluff. This load of cattle consisted of 24 cows and 5 heifer calves; 23 of these cows were grade Holsteins and one was a grade Guernsey. The latter was brought here principally because there are few Guernseys in the valley and the people are not familiar with this kind of cattle.

The cattle were sold to the farmers of the valley at cost. The sale was announced to take place at 1:30 P.M. and at that time there was a large crowd of farmers down to see the cattle. All of the men wanting to buy put their name in a hat and the clerk of the sale then announced the first name that was drawn out. This man then chose the cow he wanted and paid the price at which she was listed. The cows were designated by numbers painted on their hips. Sheets of paper giving a description of the cows, including their ages and prices were passed out to all farmers attending the sale.

The cows averaged in sale price, \$150, and the calves sold at \$25 each. Two of the calves went with cows, and the other three were bought in Wisconsin. The highest priced cow sold first at a cost of of \$182.00 and the cheapest cows sold last. The entire lot sold in about 2 hours time. All sales were for cash.

The cattle came through in very good shape in spite of the fact that they were on the road for seven days and a half, five days of that time in a snow storm and two days in the rain.

The average cost per head for all expenses on the cows was \$17, this included the expenses of a man going after the cattle and returning with them, the freight, feed, and yardage in transit.

Uncompahgre.

Five farm visits were made during the week ending April 27, and calls for service was received from ten sources.

A hog feeding test was started on the farm of P.I. Lewis during the week. A mixed lot of hogs are being fed on cooked potatoes and ground wheat. Later corn will be used with alfalfa pasture.

One day was spent with the County Agent of Delta County, inspecting the recent importation of Holstein heifers from Wisconsin to territory adjacent to the project. Owing to long journey in coming, lasting 15 days, the stock is in poor condition and many calves have been lost as a result. The heifers range in price from \$90 to \$150.

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DEMONSTRATION ON RECLAMATION PROJECTS.
Field Notes.

Tieton.

The entire week ending April 27 was spent in the office in tabulating and preparing reports. Four office conferences were held.

A recent investigation of the labor situation in Yakima county showed that while farm help is not plentiful there is sufficient to handle the work at this time in fairly good shape. Less than ten idle men were found in the pool halls and loafing places in the city of Yakima. Wages run as high as \$65.00 per month and board and day labor averages \$2.50 per day. Although this report is reassuring for the present considerable anxiety is felt in regard to the labor situation when the demand for labor materially increases.

The local hog market is \$17 per cwt. Hog feed is practically unobtainable. One ton of soft corn which had been mixed with bran to prevent molding was purchased by a Tieton farmer for \$64. Butter-fat in sour cream is bringing 41 cents per pound on the farm. The Harwood and Cowichee cheese factories are paying 50 cents per pound for butter-fat in whole milk.

The entire week ending May 4 was spent in the office. Ten office conferences were held and the remainder of the time was spent in preparing reports and other office work.

A conference was held with the Yakima Milling Company, the leading grain and milling by-product's dealers in the Yakima Valley. A report that corn is practically not on the market and that the occasional lots secured sell for about \$70 per ton. They have tried to introduce the use of coconut meal but have been unable to find a sale for it except in very small trial lots. This was being sold for \$69 per ton, the digestible protein and feed content is indicated as 23 per cent. There are some barley middlings on the market now, selling at \$47 per ton. Wheat by-products are obtainable only in small lots, with bran at \$38, shorts at \$40 and middlings at \$44 per ton. This company has been unable to obtain rice or oat products for sometime, although several months ago the supply was quite adequate and the price below that of other mill feeds.

Farmers report that the alfalfa crop is growing very rapidly and indications are of a very early and heavy first cutting. Farmers who failed to secure their seed potatoes are having some difficulty in finding local stock free from diseases. Fusarium wilt and Rhizoctonia are widespread in this district and it is difficult to find a field absolutely free from it. The seed corn situation has been handled through the office of the county agriculturist and practically all requests for seed have been filled. It is probable that local corn growers will give special attention to the selection of seed corn for commercial purposes next fall.

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WESTERN IRRIGATION AGRICULTURE

FIELD NOTES

Yuma.

During the week ending May 4, the maximum temperature was 98, minimum 49, and greatest daily range 46.

Fifteen and one-half acres were irrigated. Cotton plantings on D-21 and D-23 to 26 were thinned. C-31, and eucalyptus plantings on A-26, were plowed.

Mammoth Yellow soy beans were planted on C-33 and 34 and cotton on C-27. All fallow plats were disked and cotton plantings irrigated during the week were cultivated.

The first two plantings of flax, in the time-of-planting experiment, were harvested. Leveling was continued on the "D" series. Pecans on F-1, volunteer cotton on D-22 and farm borders were hoed.

Belle Fourche.

During the week ending May 4, the weather conditions were very favorable for field work. Potatoes and beets were seeded in the irrigated rotations, and grain in the maximum yield fields. All dry land crops have been seeded with the exception of corn, and the ground for this crop is ready for planting.

The cows were placed on the grass pasture in field Q, and the calves on the pasture in field R, on April 29.

Huntley.

During the week ending May 11, the maximum temperature was 90, minimum 30, and precipitation 1.03 inches.

Weather conditions were favorable for field work during most of this period and the seeding of all crops, except corn and potatoes, was completed. A very beneficial rain occurred on May 9, which should insure successful germination of all crops. The entire spring season has been especially favorable for getting crops in in good condition.

Pastures were ready for use by May 7 and two cows were started on pasture, in Field A-II, on this date. The pastures in field L-III are in excellent condition and there is practically no difference in the growth and appearance of the grasses which were seeded by the various methods in 1916.

A fence was constructed around the new field "O" and this field prepared for planting corn.

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WESTERN IRRIGATION AGRICULTURE
Field Notes

Huntley (continued).

Irrigated Rotations.

An excellent seed bed and ideal weather conditions during the time of planting have made it possible to secure an early start and a splendid stand for all crops.

Oats were seeded on April 29 and sugar beets on April 30. These two crops, with the alfalfa seeded on April 25, are at present just coming up. Spring wheat and flax have been up for a week.

The thirteen plats of potatoes in field K were planted on May 8. The heavy snow storm on May 9 stopped all field work for a few days, but the four remaining potato plats in field L-IV will be planted as soon as possible.

On account of the diseased and frosted crop of potatoes harvested in 1917, the supply of good seed for this year's crop was short and of a poor quality. It was, therefore, thought advisable to purchase seed potatoes to plant in the rotations. These were purchased from a leading potato grower in Madison County, Montana. The variety of potato (Mills Prize) is the same we have been growing, and the grower the same who furnished us with seed potatoes in 1915. This new seed, with a seed bed superior to that obtained in 1917, should insure an increase in yield on all potato plats for this year.

The seed potatoes were treated with formalin solution before cutting and with powdered sulphur after cutting.

All ditches and irrigating structures are being cleaned and repaired. The old alfalfa plats were getting somewhat dry and it was planned to irrigate these this coming week had not the precipitation on May 9 relieved the situation.

The two lots of fall pigs on the alfalfa pastures, rotation 67 and 69, are doing finely. The alfalfa has been growing rapidly and weather conditions for pasturing have been mostly favorable.

The gains made by each lot for the first fourteen day period that they have been on the pasture are given in tables 1 and 2.

The initial weight of each pig represents the average of three weights taken on three successive days. The first was taken in the dry lot, the second in the dry lot just before the pigs were taken out to the pasture, and the third taken after they had been on the alfalfa one day.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).

Irrigated Rotations (continued)

Rotation 67. Field K. Fall pigs on alfalfa pasture
and 2 per cent corn.

No. of hog	No. of days	Initial weight	Final weight	Gain, pounds	Average daily gain.	Pounds corn fed.	Pounds grain per pound gain.
		<u>Pounds</u>	<u>Pounds</u>		<u>Pounds</u>		
1	14	117	131	14	1.00		
12	14	88	100	12	.86		
20	14	96	111	14	1.00		
22	14	97	112	15	1.07		
27	14	97	112	15	1.07		
Total...		496	566	70	5.00	154	2.20
Avg.....		99	113	14	1.00	...	....

Rotation 69. Field L-IV.--Fall pigs on alfalfa pasture
and 2 per cent corn.

3	14	107	119	12	.86		
11	14	90	105	15	1.07		
14	14	92	106	14	1.00		
24	14	102	117	15	1.07		
25	14	108	118	10	.71		
Total....		499	565	66	4.71	168	2.55
Average..		100	113	13	.94	...	....

San Antonio.

During the week ending May 11, the maximum temperature was 92, minimum 62, and greatest daily range 30. Clear weather prevailed throughout the week.

By Tuesday, the soil had dried sufficiently to permit field work. All crops and orchards were cultivated and fallow land was harrowed. Corn, cotton and milo on the rotation plats were weeded. Milo on the rotation plats was thinned and corn in the variety test on field A3 was also thinned. Some cotton in miscellaneous experiments was thinned. All crops have made very rapid growth since the recent heavy rains. Stock ranges are also making rapid improvement.

WESTERN IRRIGATION AGRICULTURE
Field Notes.

San Antonio (continued).

The recent rains were general over a large area in the region and seeding cotton and feed crops is being pushed in those sections where seeding had not already been done.

Mr. Letteer made a trip to Laredo and Catulla, Texas, the last part of the week to study the onion industry in the vicinity of those places.

BIDS.

The following memorandum, dated May 9 and signed by the Chief Clerk of the Department, is called to the attention of Farm Superintendents:

"An annual appropriation is applicable only to expenditures properly incurred for the use of the particular fiscal year for which it is made, and administrative officers should not anticipate the needs of a succeeding fiscal year and use unexpended balances for the purchase of supplies and materials merely in order to use up such unexpended balances.

"Towards the close of the fiscal year 1917 an extraordinary number of proposals for supplies and equipment were sent out, resulting in congestion in the Board of Awards and rendering difficult the proper consideration of awards. Many proposals for large amounts were laid before the Secretary very near the end of the fiscal year, leaving him insufficient time for their proper consideration before approval or disapproval. It is believed that this situation can be largely avoided by getting proposals out early, and to that end you are respectfully requested to fix no date for the opening of proposals later than June 14, 1918, except in special cases. In each such case a convincing statement approved by the Chief of Bureau should accompany the request for proposals.

It is urged that careful consideration be given to this matter and, as far as practicable, that all proposals for the remainder of the fiscal year fix a date of opening not later than June 14, 1918."

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Shoshone.

During the week ending April 6, 69 office calls were received. Most of the time was given to assisting in distributing the Netted Gem seed potatoes, shipped in by the farmers. Most of the seed was satisfactory but in one of the three cars unloaded at Powell there were some rotten potatoes. As the names of the growers was on the sacks, it may be possible to make them make good. The rotten potatoes evidently had been frosted sometime before loading. The car which was sent to Cody was in good condition.

Some attention was given to the Forest Reserve herd, grass pastures, and Sunflowers for silage.

During the week ending April 13, 12 farm visits were made, 29 office calls were received, 3 other conferences were held, 4 milk samples and 4 cream samples were tested, and 96 cattle were inoculated for blackleg on 10 farms.

The main activity this week was in connection with the Forest Reserve herd. Saturday was the first receiving day for the Directors of the Shoshone Livestock Association. As the cattle were listed by the Secretary of the association, a representative from this office assessed the value of the animals at about two-thirds of their market value for beef. A good many of the farmers took the additional insurance offered by the association, paying 3 per cent of the assessed value of the animals. The fund thus provided will be pro rated among those taking the insurance, according to their losses based on the assessed valuation.

During the week ending April 20, 1 farm visit was made, 58 office calls were received, 2 other conferences were held and 7 milk samples were tested.

Considerable time was given to distributing seed which the farmers had ordered cooperatively for mixed grass cow pastures. It seems to me that there is a great advantage in the farmers ordering the seed cooperatively rather than buying from a dealer, in that they can get the kinds of seed they want and just the amounts they want, better this way than by depending on dealers. It might be different where the pasture idea is well established and the dealers carry good stocks of the proper seeds. It is fortunate that one of the farmers was once a seed dealer, so that by handling the seed in his name it is obtained at dealers' prices.

Correspondence is being carried on to assist two of the farmers in obtaining a registered Holstein bull.

MEMORANDUM FOR THE RECORD

1911

The following information was received from the Bureau of the Census on the 15th day of January, 1911, regarding the population of the United States in 1910. The total population was 92,228,496, an increase of 26.7% over the population in 1900. The increase was due to a combination of factors, including a high birth rate and a low death rate. The population of the United States in 1910 was the highest in the history of the country.

The population of the United States in 1910 was distributed as follows: 47,730,000 in the Eastern States, 44,498,496 in the Western States. The population of the Eastern States was 52.3% of the total population, and the population of the Western States was 47.7%. The population of the Eastern States was 10.5% more than the population of the Western States. The population of the Eastern States was 10.5% more than the population of the Western States.

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Field Notes.

Shoshone (continued).

Those who found rotten potatoes in their seed which was shipped in are reporting their losses so that a claim can be made.

During the week ending April 27, 2 farm visits were made, 49 office calls were received, 1 other conference was held, 16 milk samples were tested and 9 cattle were inoculated against blackleg.

Returns were received on the car load of cattle which were sold April 4. Through some mistake the check was sent to the wrong bank and the mistake was not discovered for a while. The shipment was quite satisfactory. The expense of shipment, not counting shrinkage, was about 70 cents per cwt. Cows sold for \$7.75 to \$10.25 per cwt. Heifers sold for \$7.75 to \$9.75. The one bull sold for \$9.00. There were no steers in the shipment. It would have paid well this year for those farmers who shipped during the real cold weather, to have waited until warm weather.

It has been found impossible to obtain any White Smyrna barley except a small amount which is furnished by the State Experiment Station for a test. One of the farmers has agreed to make a careful test of this.

A Holstein bull calf was ordered from the Montana Experiment Station for one of the farmers. His dam has an official record of 12 pounds of fat in 7 days as a 3-year old and she has a private record kept at the college for a year of 714 pounds of butter. His sire's dam has an official record of 36 pounds butter in 7 days and 991 pounds in one year.

Arrangement was made for the cooperative shipment of a carload of fat hogs which will be ready in the near future.

Minidoka.

Because of the change in the system of buying wool, as announced during the week ending April, 27, it was decided to abandon the plans for an assembled wool pool. Under present conditions the suggestions of the wool buyers and warehouse representatives are to list the wool for sale. This should be done with a statement including the number and kind of sheep and the method of packing used. It is deemed advisable to do this in the sections where there are many small farm flocks in order that none be overlooked when the shipments are made. The following form was offered as a guide:

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Field Notes

Minidoka (continued).

"The undersigned has for sale the following clip of 1918 wool.
The wool on hand is from:

Finewool: _____ ewes and _____ rams.*

*Crossbred: _____ ewes and _____ rams.

Hampshire: _____ ewes and _____ rams.

Longwools: _____ ewes and _____ rams.

_____ ewes and _____ rams.

The wool on hand consists of _____ sacks, containing approximately _____ pounds. It was sheared on _____, 1918 and is in good condition, honestly packed and well tied with a glazed or paper twine. The fleeces of bucks and black sheep are sacked _____ (state whether separately or with the ewes wool) and the tags are _____ (state whether sacked separately or left on).

(Signature) _____"

* State kind of rams and ewes.

The April tests of the Project herds in the cow testing association were completed during the week ending May 4. The Holstein herd of the Beebe Brothers at Rupert was the most profitable, averaging 906 pounds of milk and 33 pounds of fat to the cow.

The most remarkable records in the association are those of the Waldron herd at Rupert. This herd consists of 16 cows of which one is a registered Holstein, 2 high grade Holsteins and the others of mixed breeding including Jersey, Holstein and Shorthorn blood. The production of the 15 cows that were milked during the month was 7996 pounds of milk and 311 pounds of fat. This was produced in the following proportion:

	<u>Pounds of milk</u>	<u>Pounds of fat.</u>
Three best cows.....	3798	141
Twelve poorest cows.....	4198	170

From the beginning this herd has demonstrated that the 3 best cows are more profitable than the other 13.

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Field Notes.

Uncompahgre.

Thirty-three farms were visited during the week ending May 4 and calls for service received from fourteen sources.

The first part of the week was given to assisting with the Liberty Loan drive among the farmers of the project. The loan was oversubscribed by a large percentage under the project.

The shipment of cows from Arizona arrived on the project the middle of the week after being on the road eight days. They were unloaded twice for rest and came through in excellent condition. The cars were decked for baled hay and troughs put in for water. This is the best way of handling stock for shipment as they do not have to wait so long for feed and water. The cows are nearly all disposed of up to the present time and range in price laid down from \$125 to \$160 per head.

The plans for the bull association block at Montrose have been worked on and a bull has been secured at \$275. The bull is of the Holstein breed, whose dam has a record of 780 pounds of butter-fat in a year. He will be kept on the farm of Mr. Hanna near Montrose.

Eight calves were vaccinated at Olathe during the week.

Seventeen farms were visited during the week ending May 11, and calls were received from 18 sources.

The wool pool matter was taken up and considered after information was received from the Washington office regarding the price of wool fixed by the Government. It was thought best under the system adopted not to attempt to go farther with the matter this year, but to advise the growers regarding the plan adopted and suggest that they bring in their wool to the licensed dealers. A circular letter was prepared and mailed to the wool growers interested.

A trip was made to Delta County with one of the project farmers for the purpose of assisting in the selection of a Shorthorn bull.

Assistance was given to two parties in locating a Jersey bull and forming a bull club near Montrose. The members of the Holstein Association were notified to send in their money to the treasurer so that the pen might be constructed and the bull purchased as soon as possible.

Butter-fat is 41 cents at the Montrose Creamery.

Seventy-six hogs were weighed for a farmer in one hour's time with the portable scale.

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Field Notes.

North Platte.

The fore part of the week ending May 4 was spent with Mr. Farrell in looking over the work being done on the project through this office and in outlining the work to be done through the season.

A number of the farmers who had purchased the cows recently brought to the project were visited. All of these men were very well satisfied with their cows and some of them said that they would like to buy more just like them. Out of the carload of 24 cows there were sixteen men who bought them so that they were quite well distributed and will serve as good demonstrations of the difference between good and poor dairy cattle.

One-half day was spent with Mr. Farrell at the Experiment Farm with Mr. Holden. Arrangements were made for some experiments to be carried on at the station with dairying which will be of practical benefit to the farmers on the project.

Saturday was spent with Mr. Propps, the government dairy fieldman for this State. A number of farmers were visited in the interest of dairying and some milk record work was started.

A trip was made 45 miles north of Torrington with one of the farmers on the project to buy some Guernsey cows that were offered for sale but the cattle were rather poor quality and so were not purchased.

The week ending May 11 was spent almost entirely in working with some of the dairymen of the valley. Some plans were made for building some silos during the course of the summer, and from the interest that is being shown in silos there will probably be several erected before the end of the year.

Mr. Propps, dairy fieldman for the State, spent Monday in the valley in visiting farmers interested in dairying and in advising with them in regard to the business. Assistance was also given to a farmer, who is making a start with Holstein cows, in purchasing a pure bred Holstein bull.

A number of farmers who are milking were visited during the week and given a start in keeping milk records. One farmer was assisted in purchasing some good milk cows.

In connection with the other work some assistance was given to members of the pig club for this year. There is considerable interest being taken by the children and the older people in this work and plans are already being made for a pig exhibit at the County Fair this fall.

The weather here was ideal the first half of the week but the last half was very stormy, with strong wind, rain, and snow. Field work was stopped for the last three days of the week.

Live stock could not be doing better than they are. There is no hog cholera or any contagious diseases of any kind.

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WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

Scottsbluff.

The weather was very pleasant during the week ending May 4. The maximum temperature was 83, minimum 35, and precipitation 0.

The following seedings were made: Barley and oat varieties; barley and oat cultural tests; sugar beets in the rotation experiments and time-of-thinning test; sugar beets and oats in the maximum-yield test.

The men were kept busy doing general field work and working on the 800-acre pasture fence.

Mr. Farrell visited the station on Wednesday. Mr. Harris, who will have charge of the Dry-Land work arrived Wednesday evening. Mr. David Jones and Mr. Henry Sullivan left for military service on the first of the month.

The weather during the week ending May 11 continued warm and dry until Wednesday evening when it turned rather cold and rained 1.38 inches during the night. The remainder of the week was stormy and cold. The maximum temperature was 86, minimum 31, and precipitation 1.64 inches.

The rain was very timely for the soil was getting dry. Had it not rained there would have been many farmers asking for irrigation water before the end of the week. Water has been in the main canal for about a month but as yet it has not been turned into the laterals.

A number of fields were seeded to oats and alfalfa. Field A-VIII, where sweet clover was pastured in 1917, was plowed up and seeded to oats. Grass will be seeded on this field in the fall. Mangel varieties were seeded. Flax was seeded on the irrigation rotation plats.

The alfalfa pasturing experiments with hogs and sheep were begun the first of the week.

The fence on the north side of the 800-acre pasture was completed.

Professor Propps, of the University, was at the station Sunday.

Ninety-nine lambs and 13 fat hogs were sold on Monday.

Truckee-Carson.

Mr. Headley reports as follows regarding the effect of change of feed on milk production:

From alfalfa hay to sweet clover pasture.— Two cows, a Holstein and a Jersey, which had been receiving a daily ration of 35 pounds of beet pulp silage and unlimited alfalfa hay were turned into

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Truckee-Carson, (continued).

sweet clover pasture on April 16, but the feeding of beet pulp was continued. The milk yield for 5 days previous to turning on pasture was:

Holstein.....	20.0	pounds per day
Jersey.....	<u>19.6</u>	" " "
Average.....	19.8	" " "

The milk yield for the 5 days immediately after turning into the sweet clover was:

Holstein.....	19.3	pounds per day
Jersey.....	<u>19.8</u>	" " "
Average.....	19.5	" " "

The change in ration resulted in no marked increase or decrease in milk flow.

From sweet clover to winter wheat pasture.- On April 30 the cows were turned from the sweet clover pasture to a field of winter wheat, the feeding of beet pulp silage being continued as before. During the 5 days preceding the change the daily milk yields were as follows:

Holstein.....	20.9	pounds per day
Jersey.....	<u>21.6</u>	" " "
Average.....	21.4	" " "

The milk yield for the 5 days immediately following the change to wheat pasture was as follows:

Holstein.....	22.6	pounds per day
Jersey.....	<u>24.7</u>	" " "
Average.....	23.7	" " "

The wheat pasture resulted in an increase in milk yield of 2.3 pounds per day.

Small beds of the following grass, clover, and forage crops have been planted in a plat near the house of the farm superintendent: timothy, western rye, Italian rye, red fescue, red top, tall oat grass, orchard grass, Kentucky blue, smooth brome, giant Australian rye, hard fescue, alsike clover, red clover, crimson clover, mammoth red clover, burr clover, meadow fescue, white clover, and *amaranthus paniculatus*.

Heavily infested eel-worm potato seed, secured from the farm of Edmund Dietz, was treated by heating to varying periods and were then planted in plat H18.

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Field Notes.

Truckee-Carson (continued).

A row of uninfested and untreated seed was planted as a check between all rows of treated seed.

Potato varieties were planted May 2 on the farm of Fred Sander. The varieties were alternated with 3 rows of seed furnished by Mr. Sander, probably Idaho Rural, which were used as checks. Another variety test of potatoes was put in on the farm of E. S. Funk, near Fernley. As a check, a row of Russets was planted every third row. In addition to the potato varieties planted on private farms, a planting of 11 varieties was made on the experiment farm in field A2.

Corn varieties were planted in duplicate May 13, in plats H1 and H2. Minnesota No. 13 was planted May 8 as a silage crop in the following rotation plats: D1, E3, F4 and F16.

Varieties of sweet corn were planted May 13 in field H2.

Mr. Headley made a trip to the University of Nevada May 10, for the purpose of securing a laboratory assistant to take the place of Mr. Curtis who resigned in February. No men were found to be available. Miss Dorothy Mahan was highly recommended and her appointment was therefore requested.

San Antonio.

During the week ending May 18, the maximum temperature was 88, minimum 21, and greatest daily range 32.

All crops have made rapid growth during the week, but as there was been no rain of consequence for two weeks, corn is beginning to show the need of moisture. Corn is beginning to tassel and Dwarf milo is heading. Cotton is ready for thinning.

The principal field work has been weeding. All rotation plats orchards, several miscellaneous fields, and roads were weeded. Sorghum in the variety test on field C6 was thinned. Fallow land on fields D3 and F3 was disked to set back Johnson grass and kill weeds. Johnson grass in the pasture and on waste land was cut for hay.

Mr. Letteer made a trip to Llano, Texas, the latter part of the week to secure seed of the Prunus Texana hybrids growing in that vicinity.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes

Umatilla.

Mr. Allen reports that several frosts that occurred in April destroyed practically the entire peach crop. Some of the later blossoming varieties of apples, especially those in favorable locations, promise to make a crop. The severe frosts that occurred early in the month did considerable damage to barley and young alfalfa.

The continuance of dry windy weather caused the loss of much young alfalfa that was sown in anticipation of spring rains bringing it up and keeping it moist until irrigation was begun.

Water was turned into the canals April 1 and irrigation began April 2. Although the season was cool it was dry and the water was much needed.

Heavy winds occurred frequently throughout the month. The use of straw, which has become general on the older portion of the project, plainly showed its ability to prevent serious wind erosion of the soil. While there was doubtless more land prepared for irrigation this spring, the loss resulting from wind erosion was very slight. On the West Extension, where most farmers are new to the country, and where straw and other covering materials are not plentiful, several fields have blown badly.

Shoshone.

During the week ending May 4, 4 farm visits were made, 34 office calls were received, and 16 other conferences were held.

About all of the farmers who will sow grass pastures this year have ordered seed and practically all this seed has arrived and been distributed. With the assistance of this office, 38 farmers have ordered seed for about 140 acres. These orders included the brome grass, meadow fescue, orchard grass, Kentucky blue grass, timothy, alsike clover, and white clover. A few men have obtained grass seed individually, but when they order through a dealer they seldom get the proper mixture.

The Board of Directors of the Shoshone Live Stock Association received cattle for the second time on Tuesday of this week. Eight men delivered cattle which were assessed and delivered to the herder. The herder reported that during a severe storm the latter part of last week only one small calf was lost. He also reported that the grass on the range is growing well now.

During the week ending May 11, a car of hogs shipped to Denver, 3 men cooperating in the shipment. Each man's hogs were marked so as to be sold separately.

Arrangements have been made with the supervisor of the Forest Reserve range to put a few more cattle on the range. Several men

DEMONSTRATIONS ON RECLAMATION PROJECTS
Field Notes.

Shoshone (continued)

who failed to make application before March 1 took advantage of the opportunity to use the additional allotment,

The wool buyer who buys practically all of the wool from the prominent wool producers and from the small dealers of this section, has informed this office that his house has been commissioned this year to handle wool for the Government and he advises that growers here store their wool in properly marked bags in a warehouse at Cody.

A meeting of the directors of the Powell Breeding Association was held at this office. This company of farmers owns two high class Percheron stallions which it bought this spring. The man who was hired to care for the horses seems to understand his business and the prospects for a good use of the horses for the coming season seem good.

WOOL MARKETING SITUATION.

Under date of May 24, a copy of a circular entitled, "Government Regulations for Handling Wool Clip of 1918", issued under date of May 21, 1918, by the Wool Division of the War Industries Board, was mailed to each of the field men engaged in live stock work. On May 25, a consultation was had with a representative of the Wool Division of the War Industries Board with reference to these regulations. As the result of this consultation, the following suggestions are made:

(1) As any local wool buyer may receive wool for consignment to designated distributing centers, local wool growers may, if they desire, deliver their wool to a local dealer and receive from him an advance up to but not exceeding 75 per cent of the estimated value of the wool. No particular dealer or dealers in any locality have been "commissioned by the Government" to receive wool.

(2) As stated at the bottom of page 3 of the circular, growers are advised to pool their wool, provided a community is able to accumulate as much as 16,000 pounds for a carload shipment. According to the circular, "growers are urged to adopt this latter course through county agents or others, thus eliminating the profits of one middleman." Thus the Wool Division recommends pooling, where it is practicable, in order that the growers may save a local buyer's profit, which may be as great as 2 cents per pound. It must be borne in mind, however, that where wool is pooled by the growers and consigned direct to dealers in designated distributing centers, the growers would not receive any money for their wool until the latter has been delivered at the distributing center. Delivery of wool to a local dealer has the advantage of giving the grower an advance of as much as 75 per cent of the estimated value of his wool, less 6 per cent per annum on this amount from the time the wool is delivered to the local dealer until

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Wool Marketing Situation (continued)

it reaches a designated distributing center. This advantage may cost the grower, however, as much as 2 cents per pound, which is the local dealer's profit.

(3) The designated distributing centers for the territory wool are: Portland, Chicago, New York, St. Louis, Boston, and Philadelphia. Pooled wool may be consigned to a dealer in any one of these designated distributing centers. On page 5 of the circular, in the paragraph headed "Shipping", reference is made to "approved dealers." The representative of the Wool Division of the War Industries Board stated that all dealers in the designated distributing centers are "approved" and that individual growers or groups of growers may consign their wool to any dealer in any one of the designated distributing centers. A list of dealers in Boston, Philadelphia, Chicago, and St. Louis, was sent to the field men from this office under date of April 23.

(4) The field men should read with great care the circular referred to, and familiarize themselves with the regulations therein described, as this circular is the latest and most complete statement issued by the Wool Division of the War Industries Board.

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Field Notes.

Yuma.

During the week ending May 11, the maximum temperature was 93, minimum 49, and greatest daily range 43.

The last planting in the time-of-planting test of Pima cotton and the third planting of Papago corn were made. Cotton on D20 and E45 was thinned. The long staple cotton to be ginned and cotton seed for milling were delivered to the Winterhaven gin.

Cotton as a whole on the Yuma project is not up to normal, due to cool nights and an unusual amount of wind. While a considerable acreage has been replanted, many of the early plantings have made good growth and most of it has been thinned.

The rate-of-seed plat of flax was harvested and partly threshed. Most of the varieties in the varietal block are mature. Part of the horse beans on E9 were cut for green weight.

Besides the usual amount of cultivating and hoeing, the west road date row and F1, pecans, were hoed. The A26 eucalyptus plats and Bermuda patches on A16 and 17, and 24, dates, were plowed.

The south end of the "C" ditch was fenced and will be pastured with sheep. The "D" park plantings were pruned and harrowed.

Five hundred chrysanthemum slips were transplanted from plats to pots. These plants will be used in replanting the A14-2 bed.

Mr. Butterworth of the Office of Markets visited the station during the week.

The following S. P. I. plants have been received and planted in the nursery:

2 plants	43412	Aleurites fordii.
3 "	23016	Asparagus sp.
3 "	42428	Berberis fremontii
10 "	41690	Cupressus Glabra
5 "	44203	Dasyilirion wheeleri
3 "	41391	Homoioceltis aspera
3 "	24480	Inodes Texana
3 "	44200	Juglans regia
2 "	27048	Morus alba
2 "	39040	Picea smithiana
5 "	22363	Populus simonii f. fastigiata
5 "	26812	Populus sinensis
5 "	22861	Populus suaveolens
5 "	38232	Populus sp.
5 "	33135	Salix fragilia.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued).

During the week ending May 18, the maximum temperature was 96, minimum 48, and greatest daily range 44.

Twenty acres were irrigated. During the week twenty-one acres of alfalfa and five and one half acres of wheat were harvested. Flax from C32 was threshed.

C25 and 26, planted to velvet beans, was prepared for replanting, the first planting having failed to germinate.

Dates on A18 to 21 were disked. The west road date row; A24, cotton; B18, alfalfa; grapes; park plantings, and melons, were hoed.

Mr. Lyman Carrier, of the Office of Forage Crop Investigations, visited the station and Yuma valley ranchers on the 16th. Mr. H. L. Westover, of the same office, left on May 17 for Northern California points

Huntley.

During the week ending May 18, the maximum temperature was 80, minimum 32, and precipitation .26 inch.

Weather conditions were favorable for doing field work during most of the week. All of the land in field "O" was prepared for seeding by harrowing and leveling. The following five barley varieties were seeded in duplicate on 10 one-quarter acre plats in field O-I: Chevalier, Hannchen, White Smyrna, Trebi, and Svanhals. The planting of potatoes and corn in the irrigated rotations was completed.

Ten registered Holstein cows, two Holstein yearling bulls, and one Holstein calf were received on the 19th. These cattle were shipped from the Dairy Division farm at Beltsville, Md., and are to be used in the dairying work on the Huntley Station.

Mr. F. D. Farrell visited the station on May 18 and 19 and Mr. M. Stephens, of the Mandan Station, was a visitor on the 15th.

San Antonio.

During the week ending May 25, the maximum temperature was 91, minimum 66, and greatest daily range 24. There was no precipitation and practically all crops except cotton are suffering from drought. Corn is in tassel and silk and is needing rain very much. The corn will be a failure unless rain comes soon.

Cotton on the rotation plats was thinned and the thinning of cotton in other experiments was completed. The cotton was cultivated after it was thinned. Oats for hay in the rotation experiments were cut on Friday and raked and shocked on Saturday.

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Field Notes.

San Antonio (continued).

On Saturday, Messrs. Letteer and Bryan made a trip through the country about twenty miles east and south of the station in the vicinities of Lavernia and Elmendorf, Texas. The main object of the trip was to secure seed of the *Prunus texana* hybrids. Incidental to this, it was possible to make general observations on crop and agricultural conditions. All crops except cotton are showing the need for rain. Unless rain comes soon the corn crop will be cut short. Cotton was seen in all stages of development, from that just emerging to that putting on squares. For the most part, crops are clean and well cultivated. A few fields were seen which showed lack of care. A reasonable amount of sorghum for forage is being grown on most farms. A few fields of milo and kafir were observed but these crops are not nearly so generally grown as they should be. It was agreed after returning that no crops were seen which were better than those on the station.

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FIELD NOTES.

Shoshone.

During the week ending May 18, an article was prepared for local newspapers discussing the method recommended by the Ohio Agricultural College for breeding sows for late spring and early fall litters. The sow is bred while suckling her pigs by keeping her away from her pigs over night for about four or five nights when she usually comes in heat.

Returns were received on the cooperative shipment of hogs made last week to Denver. The prices received were \$17 and \$17.25. The expense was \$1.00 per cwt. besides shrinkage.

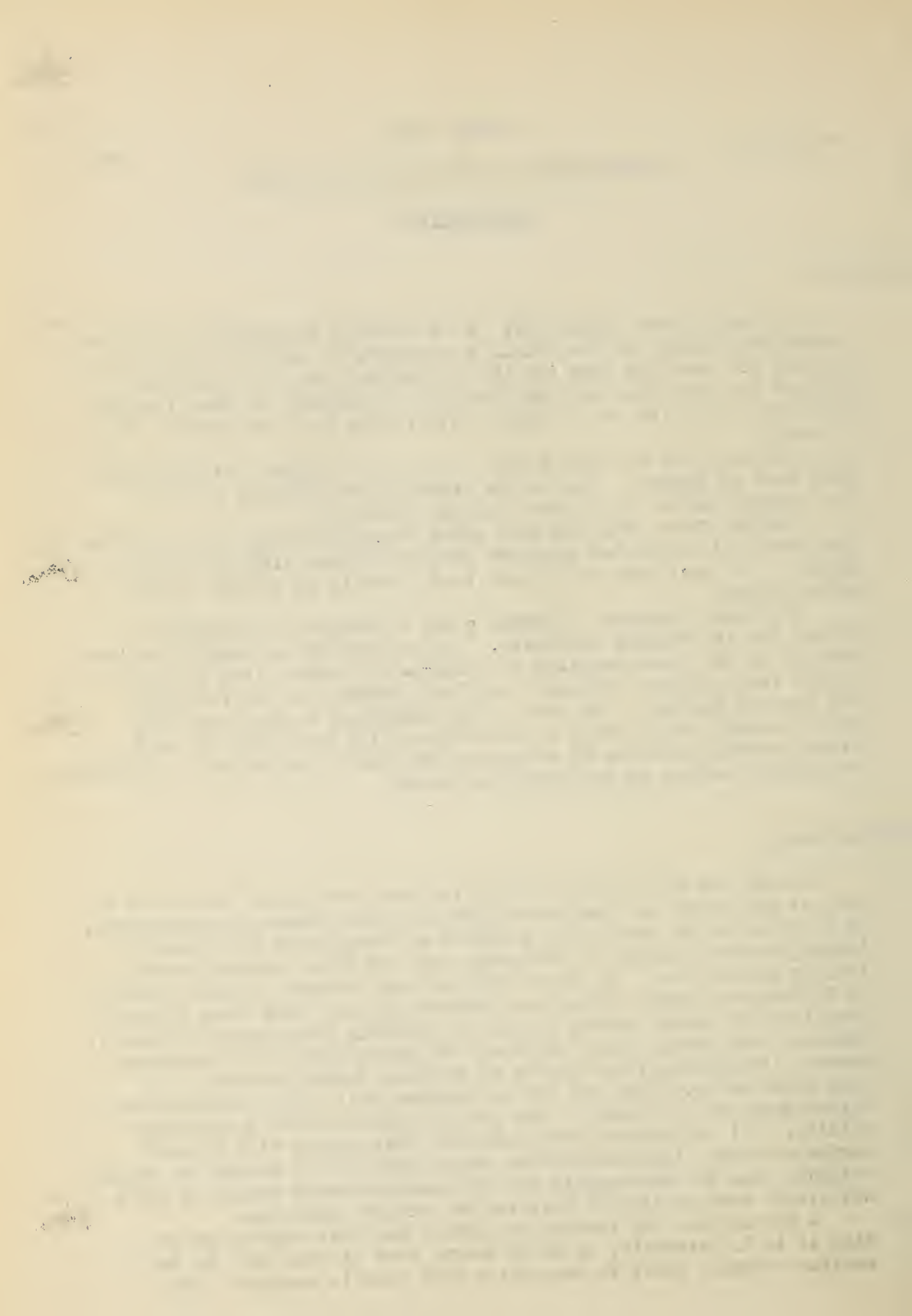
Another farmer who has used sweet clover extensively for pasture for sheep and cattle has reported serious trouble with bloating in cattle. He says that he is sure that there is no alfalfa in the sweet clover.

The local creamery is having great difficulty in providing butter for its regular customers. In the attempt to supply the local stores, it has been compelled to withdraw all butter from Billings except from its best customer and that customer is not receiving all that is desired. As very little pasturing is done, the cream supply usually falls short at this time of the year, but the high price of other products in comparison to that of butter fat is causing an unusual decline in the supply of cream.

Truckee-Carson.

During the week ending May 18, two days were spent away from the project attending the Farm Labor Section of the Nevada War Conference. As a result of the conference a number of resolutions were passed looking toward handling of transient help and other persons known as loafers and idlers. An effort will be made through the State Council of Defence and County Councils of Defense to keep this class of men away from the usual loafing places by requiring proprietors of hotels, saloons, pool rooms, etc., to report to town marshals all unemployed persons frequenting their places of business during the day. A wage scale of \$3.00 per day for all harvest help except stackers was agreed upon for the state. The pay for stackers will depend upon ability. It is expected that farm help this summer will be much harder to secure than heretofore, and an effort will be made to secure soldiers from the cantonments for the coming harvest season as it is not likely that sufficient help can be secured otherwise.

A cooperative pig feeding experiment has been started on the farm of A. R. Wainscott, in which thirty head of hogs will be fed potatoes without limit in connection with alfalfa pasture. The



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Field Notes.

Truckee-Carson (continued).

initial weight of the hogs was taken on May 1, and the second weight was taken on May 11 after the hogs had been running on alfalfa pasture but without any supplementary feed. During this eleven day period the hogs made a .306 percent daily gain. At the time of the second weighing the hogs were started on a ration of raw potatoes, all they would eat, in addition to the alfalfa pasture. The potatoes for this experiment were purchased for \$5 a ton in the pit.

The local grazing association, which was organized the first of the month, is operating very satisfactorily. About one thousand head of cattle and horses are being cared for by the herder. So far everything is moving along very satisfactorily. The range upon which these animals are pasturing is being enclosed with a stock fence now by the Reclamation Service. When the fencing is completed much of the territory will be irrigated and the pasture developed to its greatest possibility. According to the arrangements so far worked out, when the community pasture is enclosed each homesteader, paying operation and maintenance charges on his homestead at actual cost, will be assigned pasturage in the community pasture according to his farm acreage. A small fee to pay incidental expenses will be charged for the use of the pasture.

The first cutting of alfalfa hay will begin about June 15.

North Platte.

During the week ending May 18, about 28 head of cattle at the Experiment Station were dehorned and vaccinated, and about 20 lambs were docked and castrated.

Three farmers were started to keeping milk records and three more farmers were interested in building silos this summer. There seems to be a growing interest in dairying and one of the farmers that has been keeping milk records for the past two months sold 5 of his poor cows to the butcher and replaced them with 2 good cows. He also sold his scrub bull and replaced him with a registered bull.

Four farm visits were made during the week to inspect hogs for cholera but in no case was there any cholera found.

Two calls were made at the request of farmers to assist them in caring for cows having caked udders. These were some heavy milking cows which had just freshened.

The fore part of the week ending May 25 was taken up almost entirely with dairy work. Two men were started to keeping milk records and two were given some assistance in planning a silo. Because of the extra cost of machinery it is very difficult to get the people interested in silos and there are not enough men in any

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North Platte (continued).

one neighborhood who are interested in silos to buy their machinery together. Assistance was given one of the dairymen in selecting two dairy cows.

Several calls were received during the week to inspect hogs for cholera but at none of the farms has there been any cholera found. There has not been a case of cholera on the project this spring.

Arrangements were made with four farmers this week to conduct hog feeding demonstrations on their places this summer. The work will all be started within the next two weeks.

A large number of the fields of beets are up and the crops are all looking fine, in spite of two pretty general hail storms on the project during the week.

All of the sheep on feed have been shipped and almost all of the fat cattle are also gone. Butter-fat is selling at 42 cents to the Scottsbluff Creamery, 40 cents at Mitchell to the Farmers' Union and 39 cents at Morrill to the Farmers' Union.

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PEA FEEDING IN SAN LUIS VALLEY, COLORADO.

Because of the strong interest in the use of field peas on the Reclamation Projects, the following report by Mr. Lindgren on "Pea Feeding in San Luis Valley" is presented. This report was submitted by Mr. Lindgren in December, 1916, and prepared for inclusion in the Weekly Bulletin for January 6, 1917, but its publication was omitted through an oversight. While not all the practices described in this report are to be recommended to our farmers, the information in the report will doubtless be of assistance to the field men.

For the purpose of getting data and information on pea pasturing and feeding methods in the San Luis Valley, two trips were taken to Monte Vista, which is the center of the pea feeding section. The information gathered was obtained from practical farmers and from Mr. E. H. Thomas, County Agent. The first visit was made in August before the farmers had started their feeding operations, and the second during the week of November 19 to 26.

The San Luis Valley contains over 4,000,000 acres, approximately one-fourth of which is cropped. The pea feeding section of the valley centers around Monte Vista. It is estimated that 50 per cent of the cropped area is in peas. Other crops grown are wheat, potatoes, oats and barley. It has been thought until recent years that alfalfa was a crop that could not be grown in the valley on account of ground water, but this idea is rapidly disappearing and a large acreage of this crop is now being put in.

The center of the valley is very level. The soil is sandy and in a number of sections contains a great deal of gravel. There is a general lack of humus in the soil, but the latter is being slowly built up by the pasture methods used.

The altitude of the valley is 7600 feet, the rainfall is a little less than eleven inches and the peas are grown under irrigation. Fall frosts are early in most seasons, frequently appearing in August, after which the peas make no more growth. The winters are very cold and windy. There is very little snow, although that which comes is somewhat detrimental to the pasturing of peas, especially with sheep.

There are a number of varieties of peas grown, of which the "Mexican" is leading. This is really a mixture of several varieties and has been grown since the early days of pea raising in the valley. Another variety grown is the "Washire", which matures a little earlier than the common Mexican variety.

The grain crops used with the peas depends on the method of utilization. For sheep, bald barley or oats is used. It is not found practical to use wheat with the peas for the sheep on account of its injurious effect on digestion. When wheat is used the losses are heavy. For hogs, both barley and wheat are used. Barley, on

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account of it's composition, is believed to make a better combination with the peas. It is thought by some of the farmers that barley is not an ideal crop to grow with peas on account of the difference in time of maturity. However, no better grain crop has been found.

The farmers commonly practice a four-year rotation in the handling of peas. Peas follow a grain crop. They are sown in the stubble. The ground is seldom plowed before a crop is put in. The general idea is that the plowing of the ground results in a larger vine growth and less grain than when the peas are sown in the stubble. Peas are sown two years in succession, then followed by potatoes, then grain again. This system seems to prove satisfactory.

Peas seem able to withstand severe weather before they blossom. They are sown as early as the ground can be handled in the spring, usually between March 1 and April 15. The rate of seeding is 40 pounds of peas and 30 pounds of grain per acre. The seed is put in with drills, with every other hoe of the drill stopped during seeding.

The land is irrigated shortly before seeding, and when the peas are six inches high another application of water is given. Later on, more water is added, usually just prior to, or during blossoming. Very little water is needed after the pods are formed.

The pasturing of peas by hogs is more general than other methods of utilization of the crop. It is found best to let the pea become thoroughly ripened. It is found by the farmers that the hogs are unable to stand the feed when the vines and pods are partially green. It is also found that there is less food value in the grain then. As soon as a frost appears in the fall, that checks the growth of the peas, they are ready for the hogs. This happens usually around September 1. The hogs are then turned into the field and are allowed free run of the peas. They consume very little of the vine, but pick out the grain. They are allowed to run until ready for market, which is from 50 to 70 days, depending on the condition of hogs at time of turning on the peas. The peas are cleaned up very well and there is little waste in grain.

Each acre of peas makes from 250 to 400 pounds of pork or finishes two to five hogs. When the grain is all consumed, the vines usually are burned before the next crop is sown. This method appears to be very wasteful from the standpoint of soil fertility. However the farmers plan to build up the fertility by the hogs pasturing on the ground. Some of the farmers are forking the vines into the furrows and plowing them under. The more successful farmers consider that the vines should be plowed under rather than burned.

Another method of handling the peas as hog feed, but one which is not carried on to any great extent, is to cut the vines a little green. The vines are allowed to cure and are fed in a feed lot in that condition or are ground in an alfalfa mill. This method utilizes the vines to better advantage as a large quantity of them are

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PEA FEEDING IN SAN LUIS VALLEY, COLORADO (continued).

consumed. However, the manure must be hauled and the extra work of harvesting is considerably greater. The pea vines in this form are considered to be worth one-half their weight of alfalfa.

Lambs are pastured also, though not so extensively as hogs. It is necessary to exercise a great deal of care in feeding the lambs when on peas, otherwise there is a great deal of loss. The lambs are not put on the peas until after the range season is over, which is during October. They are not so able to graze the peas as the hogs are, so as precaution against storms, a part of the vines are raked and shocked so that there will be some accessible in case of snow. The lambs must be watched closely; otherwise they will eat more peas than they can stand and losses will occur. For this reason they are forced to graze back over the same ground as much as possible. Where care is taken by the herder, the losses are very small, usually about one or two per cent. It is found that an acre of peas will fatten from 7 to 10 lambs and they put on gains of 20 pounds each.

Old ewes are carried over on peas very well, but the farmers find it necessary to keep them grazing over the same ground; otherwise they become too fat for breeding purposes.

These methods of utilization have been carried on for the most part since peas were first raised in the valley. However, a few farmers and the County Agriculturist feel that another method will be far better for the economic upbuilding of the county. This method is now being practiced by one of the most successful men in the section. A visit was made to his farm, on which 6,000 lambs and a flock of old ewes are being carried. The first thing noticed on visiting the farm was an alfalfa grinder through which a large stack of pea straw, recently threshed, was being ground. This feed is used with ground alfalfa for the wintering of old ewes. The ewes consume all of the vines and are kept in excellent condition for breeding purposes. The peas from this straw are saved for next year's seed in sowing from 100 to 200 acres of peas. This feeding makes a great deal of manure for the farm.

The feed for the fattening lambs was the field crop of peas and barley, including the grain and straw, which had been run through the alfalfa grinder. This makes a very fine feed with the peas cracked. The lambs after 30 days on this feed weighed 77 pounds. The weights at the beginning of the feed were not available.

The vines were cut a little green on this farm and were readily consumed when ground in this manner. This system shows good results, but is too new to make comparison as to economy, with the pasturing method.

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PEA FEEDING IN SAN LUIS VALLEY, COLORADO (continued)

The matter of raising peas can no doubt be carried out in other localities and the question of varieties must be determined in each section. The method of pasturing saves a great deal of labor and has many advantages. However, the matter of utilization of the vines is of considerable importance, as is also the matter of keeping up the soil fertility.

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Umatilla.

During the week ending May 11, the maximum temperature was 72, minimum 32 and precipitation .31 inch.

Mr. Farrell spent three days on the farm and project. While Mr. Farrell was here a conference was held with Director Cordley of the Oregon Station in regard to the future work of the Farm. The plans consist essentially in gradually decreasing the horticultural work and in increasing the agronomic and livestock work.

Measurements were made of the cover crops in the soil fertility rotation in field D4. It was found that the effect of the continued applications of manure is more pronounced over the unmanured plats with each succeeding crop. The difference between the cover crops following alfalfa plowed under a year ago last fall and those following summer crops of grain sorghums was not so pronounced as a year ago, showing that the effect of the alfalfa was decreased considerably in one year.

The alfalfa borders in fields B2 and B3 were reseeded with alfalfa and barley.

During the week ending May 18, the maximum temperature was 80, minimum 45, and precipitation .05 inch. The weather continues cold and windy. The first crop of hay will probably be the lightest in the history of the project.

The work of turning under cover crops was completed during the week.

A variety test of twenty varieties and strains of corn was planted in A2.

The dead trees and some of those crowding each other in the forestry and ornamental were grubbed out.

During the week ending May 25, the maximum temperature was 76, minimum 29, and precipitation .04 inch.

A width and distance of planting experiment with corn was planted in the trees rows in field C1.

There is considerable interest in saccharine sorghums on the project this year as a result of a successful planting last year. Three varieties; Texas Seeded Ribbon Cane, Early Amber and Red Amber are being tried on the Farm this year. Seed of early Amber was distributed to three farmers for cooperative trial.

Potatoes were planted in the commercial fertilizer rotation in field A4.

The corn and alfalfa on the rotation in field D4 was planted and irrigated.

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Umatilla (continued).

Mr. F. W. Kerhli, of the Salt Lake Dairy Office, and Mr. M. S. Shrock, county agent spent several days making a survey of the dairy industry, paying particular attention to the bull association. They spent half a day going over the work at the farm.

Truckee-Carson.

The following cabbage varieties were planted in field A3 during the two weeks ending May 25: Early Jersey Wakefield, All Seasons, Glory of Enkhousen, Early Winningstadt, Danish Ball Head (long stem), Danish Ball Head (short stem), and Ideal Winter.

In the same field on May 23 crop varieties as follows were planted: Sand vetch, 2 rows; broom corn, 2 rows; feterita, 2 rows; Egyptian corn, 2 rows; Kafir corn, 2 rows; Sirclas grass, 2 rows; buckwheat, 4 rows, and flax, 4 rows.

Three varieties of string beans were planted May 23 in A3: Refugee, Stringless Greenpod, and Kentucky Wonder.

Distribution of tomato and cabbage plants from the greenhouse and hot beds were made as follows:

Tomatoes to boys' and girls' clubs.....	1740
Tomatoes to farmers.....	2741
Cabbages to boys' and girls' clubs.....	1100

Fifty plants of each of the following tomato varieties were planted between the tree rows in A2: Earliana, Bonnybest, Coreless, Dwarf Champion, Earlibell, Early Minnesota, Favorite, Globe, John Baer, Perfection, Prolific, and Stone.

Huntley.

During the week ending May 25, the maximum temperature was 78, minimum 32, and precipitation .29 inch.

The planting of sunflowers and corn was completed. All offfield E, which contains about 7 acres, was planted to Northwestern Dent corn. Twenty-seven, quarter-acre plats in fields O-I, O-II, and O-III, were planted to the following three varieties of corn: Northwestern Dent, Eiker's Yellow Dent, and Minnesota No. 13. Sunflowers, variety Black Russian, were planted in the orchard in field A. This planting includes three distance of rows, 20, 30 and 40 inches, and it is planned to conduct, with each width of row, the distance of thinning test, in which the different flowers will be thinned to 6 and 12 inches.

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Huntley (continued).

Because of the delay in getting the cows for the pasture work in Field L-III, it became necessary to clip half of these pasture plats, which was done on May 20. The cows were started on pasture in these fields on May 22. Three cows will be pastured on eight, one-quarter acre plats. These pastures are fenced into lots of four plats each and the lot will be pastured alternately.

Mr. H. P. Davis and Mr. Graves, of the Dairy Division, Department of Agriculture, were at the farm from May 23 to 25 for the purpose of purchasing some grade cows to be used in the dairying experiments. Ten cows were selected for this purpose. Arrangements were also made with two project farmers, Mr. J. T. McDermond and Mr. C. O. Bingamon, for using the two yearling bulls, which were received with the shipment of Holstein cattle from the Beltsville, Md. farm. No charge will be made for the use of these bulls, but it is agreed that the farmers will keep accurate records of their dairy herds.

Mr. Davis accompanied Mr. Hansen to Bozeman on May 25 for the purpose of arranging cooperative work in dairying with the Montana State Experiment Station.

Yuma.

During the week ending May 25, the maximum temperature was 93, minimum 51, and greatest daily range 39.

The weather remains cool and quite windy. Cotton chopping and alfalfa harvesting on the project are in full swing. On account of the cool spring, cotton has not made its normal growth. The alfalfa hay crops are yielding well, although in sections a light seed yield is expected on account of the bloom shedding.

Velvet beans were replanted on C25 and 26, and Kekchi cotton was planted on A15-2. All the wheat plats were stacked; also alfalfa from C38, 40, 41 and farm roads. Cotton on D13 to 15, 18, 19, and E2, was thinned and hoed.

The west row dates were furrowed and mulched with straw. The fig orchard and C43 to 45, dates, were disked and the deciduous orchard was disked and harrowed. Four acres of fallow plats were disked. The berry plantings on A1C-5 were summer pruned. The usual amount of cultivating and hoeing was done. Thirty-three acres were irrigated.

Mr. C. H. Clark, of the Office of Cereal Investigations, and Mr. C. S. Reddy, Pathologist, visited the experiment farm on May 23 and 24.

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Minidoka.

Two of the ranges of the Cattle Grazing Associations were visited during the week ending May 11. The cattle of the North Side Association, which are held on 20,000 acres of sage brush range, enclosed by a fence and watered from a well, are doing well to date, although it is believed that the number of stock is too great. Five hundred and seventy-five head of cattle and 80 head of horses are now in this enclosure. The cattle of the Jackson and South Side Associations are held on the open range and watered at Lake Walcott. Because of the winter grazing and the large numbers of sheep held in this district the range is so badly overgrazed that the cattle are not doing as well as usual.

The drought of the spring is continuing with but very few showers. On Wednesday afternoon there was a rain and snow storm of which the precipitation was light. Losses of the sheared ewes were confined to those that had been sheared that day. At Marsh Lake the loss was 63, at Kimama, 72, and at Tikura between 500 and 700 head. All losses came as a result of no shelter. As this loss occurs every year it is advocated that the shearing association rent large tents or provide sheep buildings for this purpose. A shelter which would protect all of one days' shearing would pay for itself in one storm.

Speculators in wool appeared in the field during the week ending May 18 in an effort to buy the small farm clips. The prices offered were from 30 to 48 cents. The route taken could be traced by the reports of the farmers to this office. As far as could be learned no wool was sold.

Where there is no satisfactory storage facilities on the farm, the wool is being stored in local warehouses at Rupert and Burley. The selling or consigning will be superintended by a committee of three, selected for that purpose.

Uncompahgre.

One day of the week ending May 25 was spent in conferring with the Forest Service officials in regard to cooperative grazing on the forest next year.

A trip was taken with Mr. Lewis to the farm of Mr. Solomon for the purpose of selecting a Duroc-Jersey boar pig. A weaner pig was selected for which \$50 was paid. A pasture was examined for one farmer to look for poison weeds that are injurious to cattle. The farmer had recently lost several head of heifers and some horses on

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Uncompahgre (continued).

Plans were discussed with four farmers regarding the forming of a Hog Shippers Association.

Butter-fat is bringing 41 cents at the Montrose Creamery. A complaint is coming from patrons regarding a shortage in milk supply.

A local dealer recently returned from Arizona with a shipment of Grade Holstein cows which will be sold to Project farmers.

Belle Fourche.

Mr. E. H. Aicher has been appointed to take up demonstration work in livestock industries on this project. He reported at the Washington office June 5, to receive instructions and for assignment to field duty. It is expected that Mr. Aicher will report at the project about June 10.

DAIRY STOCK FOR SALE IN OREGON.

Mr. R. W. Allen has telegraphed from Hermiston, Oregon, that Jersey stock of excellent quality are for sale at sacrifice prices in Polk county, Oregon, presumably because of a crop shortage in that district. Polk county is located just west of Salem, the State capital, on a branch of the Oregon-California line of the Southern Pacific Railroad. It is suggested that fieldmen interested in securing Jersey stock should communicate with Bernard F. Sheehan, County Agriculturist, Dallas, Polk County, Oregon.

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Scottsbluff.

During the week ending June 1, the maximum temperature was 77, minimum 34, and precipitation 2.15 inches, 1.68 inches of which fell Friday morning.

Crops are making very good growth. Alfalfa will be ready to cut in about 10 days. The cool wet weather of the past week made ideal conditions to bring sugar beets through the rather hard crust caused from heavy rains. The grass pastures are making very good growth. The indications are that two cows will not be sufficient to keep down the grass. Heretofore the pasture would not furnish feed for more than one cow. This increase is due to the application of a very heavy manuring during the winter.

Mr. Thurston, from the State University, was at the Station doing some work with potatoes.

During the week ending May 18, the maximum temperature was 87, minimum 37 and precipitation 0.

Silage corn varieties and sunflowers were planted in field K-I-II. Sweet clover and barley were seeded in field C-I. As the grass in field A-VII was a very poor stand, this field was reseeded to grasses and clover. Grass was also seeded on a narrow strip just north of the windbreak.

As the weather has been dry during the past week, the farmers are now irrigating their alfalfa. The indications are that the farmers will make more use of the early irrigation water than they did last year. At the station, all of the grass pastures have been irrigated and the men are now irrigating alfalfa.

The fence around the 800-acre pasture has been completed and the young stock will be taken to pasture soon.

Mr. O. J. Grace visited the station during the week.

During the week ending May 25, the maximum temperature was 81, minimum 45, and precipitation .47 inch.

Corn and potatoes have been planted in both the variety tests and in the irrigation rotation experiments.

Two men were irrigating alfalfa during the week. Cows were turned into the grass pasture on May 20. The young stock and dry cows were taken to the 800-acre pasture.

Mr. Burr was at the station on May 25.

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San Antonio.

During the week ending June 1, the maximum temperature was 96, minimum 70 and greatest daily range 24.

Cotton on the rotation plats and on miscellaneous fields was weeded. Oat hay from the rotation experiments was hauled in. Oats for grain was harvested. Cotton on fields C4 and C5, and sorghum varieties on field C6, were cultivated. Soil samples were taken on the corn plats in the rotation experiments. Rhodes grass on field D4 was cut for the first time this season.

Mr. A. T. Sweet, of the Greenville station, visited the farm on Tuesday and Wednesday.

Truckee-Carson.

During the week ending June 1, the beets and corn in the rotation plats were cultivated.

The remainder of field B has been leveled into 16 checks, each 50 feet wide. All checks were seeded to grain and sweet clover.

On May 27, crops were planted as follows: C-2, hog pasture mixture; C3, hog millet, and C5, Japanese millet.

Potatoes were planted on the farm of C. G. Swingle, May 27, as follows:

Row 1	Small potatoes - whole.
2-4	Medium potatoes - whole.
5-7	" " - cut
8-11	Selected for ideal shape.

On each side of these selected potatoes is planted the regular stock seed used this year by Mr. Swingle.

Yuma.

During the week ending June 1 the maximum temperature was 92, minimum 42, and greatest daily range 49.

A flax variety test in row planting on D-40 and 41 was harvested; also field peas on C36. The threshing of wheat plats was begun. Suckers were removed from fig orchard. The cotton on A24 was thinned and hoed.

Fallow plats A1 to 8, A13-1, C32, D38 and 39, were plowed. The "B" orchard, C35 beans, D22 to 26 cotton, road date plantings, and several nursery plats were hoed. Five acres of cotton and soy beans were cultivated. Fourteen acres were irrigated.

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TRAVEL

The following memorandum, dated June 8, and signed by the Secretary of Agriculture, should have the attention of all employees likely to perform official travel:

Use of Transportation Requests under Order of the U. S.
Railroad Administration, dated May 25, 1918.

"Section 10 of General Order No. 28 ("Increased Freight and Passenger Rates") issued on May 25, 1918, by the Director General of the United States Railroad Administration, becomes effective June 10, 1918, and reads as follows:

"Passengers traveling in standard sleeping cars and parlor cars shall be required to pay an additional passage charge of sixteen and two-thirds ($16\frac{2}{3}$) per cent of the normal one-way fare, and passengers traveling in tourist sleeping cars an additional passage charge of eight and one-third ($8\frac{1}{3}$) per cent of the normal one-way fare. The foregoing charges are in addition to those required for the occupancy of berths in sleeping cars or seats in parlor cars."

"To comply with the provisions of this section, pending appropriate modifications of the existing form of transportation requests, it will be necessary for an employee of the Department of Agriculture, when traveling on official business, to issue three transportation requests in connection with each journey involving the use of standard or tourist sleeping cars, or parlor car accommodations. The first request will be drawn on the railroad company as heretofore for the ordinary fare at tariff rates. The second request, to cover the sleeping car or parlor car accommodations, will be drawn as heretofore upon the company furnishing these accommodations. The third request, for the additional charge specified in Section 10, will be drawn upon the railroad company issuing the transportation on the first request. It will be necessary for the traveler, in drawing this third request, to insert the appropriate phrase from those indicated below:

1. If the travel involves the use of standard sleeping car accommodations, the words "For additional fare for travel in standard sleeping car" will be inserted.

2. If the travel involves the use of a tourist sleeping car, the words "For additional fare for travel in tourist sleeping car" will be inserted.

3. If the travel involves the use of a parlor car or chair car, the words "For additional fare for travel in parlor car" will be inserted.

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Memorandum concerning Use of Transportation Requests (continued)

"The inserted matter should be placed in the blank space immediately above the signature and title of the officer countersigning the request; in all other respects the third request will be prepared in the same manner as the first request."

LABOR

Special attention is called to the following memorandum to Heads of offices, dated June 7, signed by the Chief of Bureau:

"Recent military developments, resulting in great demands on the man power of the country, raise in more emphatic form than heretofore the problem of deferred classification for men of draft age already in the service of the Department or under consideration for appointment. The Secretary of Agriculture has therefore instructed that every resource be exhausted to secure the requisite forces before any men within the draft age are called into the service of the Department. No man of draft age should be added to the service unless the work to which it is proposed to assign him is essential and urgent and it has been fully and completely demonstrated that no other man can be secured to do the task in reasonably satisfactory fashion, or unless the work to which it is proposed to assign him is temporary in nature, or unless he has been rejected for military service on account of physical unfitness. In temporary work no man should be employed unless it is thoroughly understood that such employment will not in any way affect the operation of the selective draft law. In no event whatever should any indication be given to any contemplated appointee of draft age that his deferred classification may be requested."

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Uncompahgre.

One day of the week ending May 18 was spent in making a trip to Grand Junction with project dairymen and assisting in the selection of a Jersey bull.

Several local stockmen interested in the Western Slope Fair were conferred with and some plans were made relative to exhibits and a live stock sale during the fair. The interest in the live stock display is far greater this year than it has been in the past two years. Some fifteen pure bred Duroc-Jersey breeders are planning on bringing exhibits of hogs. A District Futurity has been planned in cooperation with the National Duroc-Jersey Record Association.

Four carloads of hogs were shipped to the Denver market from Montrose and Olathe during the week.

During the week ending June 1, 15 farms were visited and calls were received from 18 sources.

The ranges are reported dry with a shortage of feed for this season of the year. This is causing a great deal of concern among cattle and sheep owners. While the snowfall was ample last winter, there has been no rain since the snow melted. The higher ranges will probably be the best for feed. Many of the cattle on the ranges are reported to be thin in flesh, and losses are predicted unless rain occurs soon.

Practically all of the sheep are now sheared and most of the wool clip has been disposed of.

The federal sheep scab inspector has been inspecting nearly all the sheep. Other than the scabby sheep that were found last winter, no new cases of scab have developed. All of the sheep that were exposed are being dipped before going onto the range.

North Platte.

The forepart of the week ending June 1 was spent mostly in the interest of dairy work. Several of the farms having the cows brought in from Wisconsin this spring were visited and some assistance was given in the general dairy work. One of these men who bought three of the Holstein cows, and who started keeping records on them when they freshened, has sold 12 of the scrubs and bought five more good Holsteins, making in all eight good Holsteins now. These eight Holsteins are making him about 50 per cent more money than his twelve scrubs made him formerly. He has also bought a registered Holstein bull and plans to continue with Holsteins and build up a good herd from the start he now has.

The pure bred Hereford farm of John Heinz was visited on Wednesday. This man has the largest herd of pure bred Herefords on

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North Platte (continued)

the project, carrying at the present time about 150 cows. Mr. Heinz sells his stock to ranchmen all through the western country. This month he held a sale at his farm of 32 head, most of which were yearlings, and the sale amounted to \$11,000.

A number of farms were visited during the week at the request of the owners to inspect their hogs for cholera. As yet there have been no cases of cholera on the project this year.

Umatilla.

The following notes are from Mr. Allen's report for the month of May:

The cutting of the first crop of alfalfa hay was begun May 30, principally on the vicinity of the Columbia river. The cool spring resulted in the first crop of alfalfa hay being very short. This weather at the same time appears to have been favorable to the development of the "cheat grass" (Bromus tectorum) that has become such a serious pest in the alfalfa. In spite of careful and thorough spring cultivation for the eradication of this plant in the alfalfa fields it is, in many instances, apparently predominating in bulk in the first crop.

The mixed grass pasture being established by Mr. George Cressey has improved greatly in appearance during the month. The grass and clover plants have spread out a great deal, and are growing vigorously with irrigation at intervals of one week. The indications are, from this example, that grass pastures can be successfully established and maintained on the better classes of soils on the project.

The work of laying out irrigation ditches for farmers who are developing new land has greatly subsided during the month on account of attention being turned to general farming operations, and on account of the approaching unfavorable season for this sort of work.

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Field Notes.

Truckee-Carson.

THREE UNUSUAL CASES OF MILK FEVER.

The following has been submitted by Mr. Cline:

The literature describing symptoms of milk fever unfortunately deals only with what are known as typical cases. It has been the experience here in rendering assistance in about fifty cases of milk fever, that only about 25 per cent of them exhibit typical symptoms as described in veterinary literature. It is only after quite a wide experience with milk fever cases that one is able to detect non-typical cases. Three non-typical milk fever cases have come to our attention recently. The first case was that of a heifer about due to calve. The animal seemed normal in every respect except that she was not able to raise her feet. She rested comfortably in a natural position with head erect and showed a good appetite when feed was carried to her. The udder of the animal was inflated with as much air pressure as was safe and after six hours the heifer arose to her feet and in fifteen minutes more seemed perfectly normal. She gave birth to a strong calf in eighteen hours from the time she recovered from the milk fever. This is the first case of milk fever in a heifer before or after calving that has come to our attention.

The second case was that of a mature cow which calved twenty four hours previously. She seemed to be very unsteady on her feet and had almost ceased to give milk. When the inflation of the udder was undertaken the cow exhibited so much strength that she had to be thrown and stretched out before the inflation could proceed. After the inflation, the cow was released but was unable to rise at the time. After one hour and a half, the owner went to the cow and the cow got up without any difficulty and after a few minutes seemed perfectly normal. This case was an instance where the attack of milk fever was detected and treated before a stage of paralysis had progressed far enough to make the animal helpless.

A third case was that of a cow which had calved six months previously. The cow was noticed to be unsteady on her feet in the evening and unable to rise next morning but was able to move about the corral with a crawling motion. The cow's udder was inflated at 4:00 P.M. with as much air pressure as was safe and the cow was on her feet at eight o'clock, and made a complete recovery. We invariably look for milk fever in cows shortly after calving while this cow calved six months previous to her attack of milk fever.

After our experience with a great variety and combination of symptoms in milk fever cases, we have about come to the conclusion that the only constant symptom that may be looked for in all cases of milk fever is a varying degree of paralysis.

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Field Notes.

GROWING AND FATTENING FALL-FARROWED PIGS FOR THE SPRING MARKET

There is given below a brief summary of a report recently submitted by Mr. Bean covering the operations involved in growing and fattening some fall pigs on the Tieton Project. This report is of particular interest, first because of its completeness, and second because of the light which it throws upon the possibilities of producing pork under present prices for grain and meat.

There were 38 pigs in the lot, owned by Mr. R. D. Lewis, a farmer on the Tieton Project who has been cooperating with Mr. Bean for two or three years. The pigs were farrowed September 19, 1917, and were weighed for the first time on December 8, when they were weaned. The estimated average birth-weight was 2-1/2 pounds and the actual weight determined at the time of weaning, when the pigs were 80 days old, was 34.1 pounds. The average daily gain made by the pigs during the 80-day period was 0.4 pound. During this period the pigs were fed 500 pounds of wheat middlings and 320 pounds of ear-corn, in addition to the milk furnished by the sows. For a period of 6 weeks prior to December 1 the herd had access to 4.4 acres of pea-land and 7 acres of corn-land which had previously been hogged-off with excellent results. The sows were given no grain except what they were able to glean from these fields. Weather conditions were favorable for fall pigs. Individual houses and pens located on a firm bluegrass sod were used for farrowing, and excellent sanitary conditions were provided.

From December 8, 1917, to February 4, 1918, a period of 58 days, the 38 pigs were fed 2,300 pounds of ear-corn; 2,000 pounds of wheat middlings; 2,540 pounds of wheat shorts, and 50 pounds of tankage, a total of 6,910 pounds of concentrated feed. In addition to this, 2,320 pounds of skim milk was fed. If 5 pounds of skim milk are estimated to equal one pound of grain, the total grain and grain equivalent fed during this period was 7,374 pounds. During this period the pigs made an average daily gain of 0.9 pound, and 372 pounds of grain and grain equivalent in skim milk were consumed per 100 pounds of gain. The ear-corn was fed twice daily on a feeding floor. Wheat middlings and shorts were fed in a self-feeder with tankage in separate compartments. Forty pounds of skim milk were fed to the lot daily and the pigs had access to chopped alfalfa hay in feeding racks. So little hay was consumed, however, that no account was kept of it. The average grain ration, including the skim milk grain equivalent, was 5.5 per cent.

From February 4 to March 28, a period of 52 days, the pigs were fed 4,730 pounds of ear-corn; 3,760 pounds oat middlings; 2,655 pounds wheat middlings; 120 pounds of wheat shorts; 100 pounds of tankage, and 2,080 pounds of skim milk. The total grain, plus the skim milk grain equivalent, amounted to 11,781 pounds. During

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Growing and Fattening Fall-Farrowed Pigs for the Spring Market (continued).

this period the pigs made an average daily gain of 1.3 pounds, and 454 pounds of grain, plus the skim milk grain equivalent, were consumed per 100 pounds of gain. At the same time the pigs consumed 50 pounds of stock food and 30 pounds of soft coal. It appeared that oat middlings fed with ear-corn produced as good results as wheat products fed with ear-corn. The average grain ration, including the skim milk grain equivalent, in this period was approximately 5.1 per cent.

From March 28 to April 29, a period of 32 days, the pigs were fed 1,954 pounds of shelled corn; 1,340 pounds of wheat shorts; 800 pounds of wheat middlings; 50 pounds of tankage, and 1,280 pounds of skim milk, the total grain and skim milk grain equivalent amounting to 4,900 pounds. During this same period the hogs had access to alfalfa pasture. The amount of grain and skim milk grain equivalent required to produce 100 pounds of gain was 291 pounds, the low grain requirement resulting largely from the use of alfalfa pasture during the period. During this period all grain was fed in self-feeders. The hogs consumed an average grain ration of 2.16 per cent from the self-feeders, or 2.3 per cent including the skim milk grain equivalent. The average daily gain during this period was 1.4 pounds per pig. At the close of the period the pigs weighed an average of 199 pounds each, were well finished, and sold on the local market for 50 cents per cwt. over the market quotations for prime hogs.

The following table summarizes the feeding operations and the results secured:

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Field Notes.

Growing and Fattening Fall-Farrowed Pigs for the Spring Market (continued).

Number of pigs.....	38
Date farrowed.....	Sept. 19, 1917
Date sold.....	April 29, 1918
Length of period, days.....	222
Estimated average initial weight, pounds.....	2.5
Actual average final weight, pounds.....	199
Average daily gain, pounds.....	0.89
Received for pigs (at market prices of \$17 to \$17.50 cwt.)..	\$1308.15
Grain fed:	
Ear-corn, pounds.....	7,370
Shelled corn, pounds.....	1,954
Wheat middlings, pounds.....	5,955
Oat middlings, pounds.....	3,760
Wheat shorts, pounds.....	4,500
Tankage, pounds.....	200
Total grain fed, pounds.....	23,739
Average price of grain per cwt.....	\$2.39
Total cost of grain.....	\$567.84
Pounds grain per 100 pounds gain.....	518
Skim milk fed, pounds.....	5,680
Value of skim milk at 50 cents per cwt.,.....	\$28.40
Grain equivalent of skim milk (at rate of 5 to 1) pounds..	1,136
Pounds of grain plus grain equivalent skim milk per 100 pounds of gain.....	333
Condimental feeds, pounds.....	667
Cost of condimental feeds.....	\$10.46
Total cost of all feeds.....	\$606.70
Cost of all feeds per 100 pounds of gain.....	\$ 8.13
Value of gains less cost of feeds.....	\$701.45

The statement below shows the results of calculating the same operations on the basis of normal prices:

Cost of grain fed, at \$1.00 per cwt.....	\$237.39
Value of skim milk at 20 cents per cwt.,.....	11.36
Cost of condimental feeds.....	10.46
Total cost of feeds at normal prices.....	259.21
Value of gains at \$7 per cwt.....	522.41
Value of gains at \$7 per cwt., less cost of feeds at normal prices.....	263.20

It thus appears that the difference between the cost of feed and the value of the gains under current prices was \$701.45 as compared with \$262.20 under normal prices.

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Field Notes.Growing and Fattening Fall-Farrowed Pigs for the Spring Market (continued).

These results were obtained with pigs which received excellent care throughout the feeding period and which were produced by high-class, pure bred parents. All the grain except the ear-corn fed during the first and second periods was purchased in the local market. Purchases were made according to market supply and comparative prices. The frequent changes in the ration were due to fluctuations of supply and prices of feeds, but corn was used whenever it could be obtained. As shown above, the average cost of the grain fed was \$2.39 per cwt.



WESTERN IRRIGATION AGRICULTURE

FIELD NOTES

Yuma.

During the week ending June 8, the maximum temperature was 106, minimum 50, and greatest daily range 49.

The threshing of flax, wheat, and field peas was in progress. Onions and onion seed were harvested. Washingtonia palms were set along the roadway of park plantings. Water sprouts were removed and some pruning done in the "B" orchard. Eight limequats were transplanted from the nursery to "B" orchard.

Cotton on C27 was thinned. D10 was planted to various legumes. Two men spent the latter part of the week in mowing and hoeing grounds. Five acres of cotton and one acre of velvet beans were cultivated. Various fallow plats, dates, and B23 and 24 orchard were disked. C36 was plowed. Thirty-one and one-half acres were irrigated.

Huntley.

During the two weeks ending June 8, the maximum temperature was 87, minimum 35 and precipitation .64 inch.

Irrigating of alfalfa pastures was begun. This was the first irrigation of the season. These crops are making excellent growth, and the indications are that there will be a heavy first cutting of alfalfa. The number of cows originally placed on the pastures, which in field L was 3 head on two acres and in field AII, 3 head on one acre, was not sufficient to keep the pastures grazed down and an additional cow will be added to each lot.

Eight grade cows, which were purchased by Mr. Graves of the Dairy Division, was received at the Farm during the week. These cows, together with the two grades originally kept on the farm, and the pure breds shipped from Beltsville, Md., make a total of 20 cows for the Farm. A five-year old Holstein bull was received from the Erwin herd of Minneapolis. All of the grade cows were tuberculin tested after being received at the farm, by Dr. Clarence C. Walker of the Bureau of Animal Industry. Dr Walker also tested the four herds belonging to Project farmers who will have the use of the two Holstein bulls shipped from Beltsville. None of the cows tested showed indications of being affected with tuberculosis.

Mr. A. C. Dillman, of the Newell, S. Dak., Experiment Station, and Mr. John Sarvis, of the Mandan, N. Dak. Dry-Land Station, were visitors at the farm on June 8.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes

San Antonio.

During the week ending June 8, the maximum temperature was 97, minimum 67, and greatest daily range 24. A shower of 1.48 inches fell early Monday morning. This was of much benefit to all crops but was insufficient in quantity to fully mature the corn crop satisfactorily.

As soon as the soil had dried sufficiently after the rain, all crops were cultivated. Orchards were also cultivated. Milo on the rotation experiments was weeded and cotton in miscellaneous experiments was weeded. Soil samples were taken on the milo and oat plats in the rotation experiments. Sudan grass on field C3 was fenced and the steers in the pasturing experiment were transferred from the oats to sudan grass.

Hauling in of oat hay from the rotation plats was completed. The following yields were obtained:

Plat No.	Pounds, per plat	Pounds, per acre	Tons, per acre
A5-1.....	758	3032	1.52
A5-4.....	934	3736	1.87
A6-6.....	720	2880	1.44
A6-7.....	818	3272	1.64
A6-9.....	976	3904	1.95
A6-11.....	958	3832	1.92
B4-18.....	946	3784	1.89
B5-7.....	666	2664	1.33
Average.....	...	3388	1.70

Oats for grain in the rotation experiments and part of the flax varieties were threshed on Friday. The yields of oats for grain are shown in the following table:

Plat No.	Straw pounds	Grain, bushels
A4-6.....	2332	28.6
A4-14.....	607	7.3
A4-18.....	803	8.9
A5-10.....	377	11.7
A5-14.....	1307	11.1
A5-18.....	1250	12.7
A6-15.....	2596	26.1
B5-8.....	820	6.1
Average.....	1262	14.1

WESTERN IRRIGATION AGRICULTURE
Field Notes.

San Antonio (continued).

Yields of both oat hay and oats for grain were appreciably better than last season.

Several varieties of plums in the station orchard were picked. Some of the varieties which are bearing for the first time are rather promising.

Professor S. C. Mason was a visitor at the station Friday.

Truckee-Carson.

During the week ending June 8, the weather has been hot and favorable for the rapid growth of alfalfa and garden products.

The corn and mangels in the rotation plats were cultivated and hoed.

The following plats were irrigated June 6: C1, 2, 3, 4, 5; D7, and 8; E1, 2, 7, 8; F5, 6, 8, 9, 10, 11, 12; G1, 2, 3, 4, 5; H3, 4, 9, 10, 16, 17, 18, 19, 20, 25, 26, 27, 28, 29.

Scottsbluff.

The temperatures during the week ending June 8, were maximum 83, minimum 38, and precipitation .27 inch. The weather was very favorable for growing crops.

At no time during the history of the project have crops shown more promise at this time of the year. This is particularly true of small grains. Beet thinning is now on. Most farmers will begin cutting alfalfa this coming week.

Crops are looking well on the station. Bean varieties were planted during the week which completes plantings except some late seeding tests.

All the alfalfa has been irrigated. The pastures are being irrigated the second time. The grass pastures are making very good growth.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Shoshone.

During the week ending May 25, 8 farm visits were made, 19 office calls were received, 12 other conferences were held and milk was tested for one farmer.

An article was written for the local papers regarding the marketing of wool. An effort is being made to arrange for a car lot shipment from Powell.

A trip was made to Billings in connection with the marketing of the Powell Creamery butter in Billings. The marketing of hogs and the marketing of wool was also discussed with Billings firms. The Yellowstone Packing Company of Billings has meat inspection now and seems to be arranging for a larger business. They claim that they are in the market for project stock. Owing to the shortage of cream, the Powell Creamery is not able to supply the demand in Billings now. The wool dealers had no acceptable proposition to offer regarding the marketing of wool.

During the week ending June 1, 17 office calls were received. Most of the office calls were regarding grass pastures, marketing wool, shipping hogs and the Forest Reserve.

During the week ending June 8, 6 farm visits were made, 29 office calls were received, 2 other conferences were held and 3 milk samples were tested.

An effort is being made to arrange for a settlement on Netted Gem seed potatoes with the firm from which they were bought. There are a number of rotten potatoes due to disease and freezing, and some other varieties. Now that every one has planted they are requested to report on the amount of rotten potatoes and amount of other varieties. When these reports have been made, a claim will be made to the firm and there is fair assurance that the claim will be allowed.

A good percentage of the project sheep were sheared this week. It seems now that it will be possible to arrange for a car lot shipment of wool from Powell. If this is not possible, the wool will be located to Cody and the car made up there.

Some attention was given to a dispute between the Shoshone Livestock Association and one of the farmers living near the range, concerning a steer which bloated on alfalfa. It is doubtful if the evidence is strong enough to justify a suit against the farmer for damages. There is some trouble with the farmers who live near the range driving the Association cattle home with their own cattle and leaving the Association cattle out in the road over night. This will soon be over as the herd will leave for the Forest Reserve about the middle of this month.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte.

During the forepart of the week ending June a trip was made with Mr. Otto Ganz, one of the farmers here, to inspect some Holstein cattle northwest of Henry, which were for sale.

One case of cholera was discovered on the project this week in the northeastern part. The hogs were given the single treatment. The neighbors on the surrounding farms were notified of the cholera and the sick hogs were penned up. The latter part of the week the sick hogs were improving and none of the hogs on the nearby farms had become sick.

A trip was made into the extreme eastern part of the project to three farms where the hogs were reported to have cholera. There was no cholera found at any of these places but arrangements were made to vaccinate the pigs as soon as they were weaned.

A number of farms were visited the latter part of the week to interest the owners in putting up silos and also to get them started to keeping milk records. The interest in dairying on the project seems to be increasing and several of the farmers are weeding out their poor cows and replacing them with better stock.

The weather has been very warm all week and all crops and live stock are doing very well. Butterfat is selling at 42 cents and a good many of the farmers near Scottsbluff are selling their whole milk to the ice cream factory at \$3.00 per cwt.

During the forepart of the week ending June 15, a number of farms at the east side of the project were visited at the request of the owners to inspect their hogs. There were several cases found where the small pigs were affected with sore mouth. These cases were treated by washing the nose and mouth with tincture of iodine, washing the sows udders with five per cent solution of carbolic acid and sprinkling the pens with air slacked lime.

The nine head of shotes that were vaccinated against hog cholera last week have all recovered and the pens and quarters have been thoroughly cleaned. Two of these pigs, at the time of vaccination, were so badly affected that they could not stand. We gave these two a double dose of serum and they were back on feed as quickly as the others. This is the only case of cholera we have had here in the entire valley this spring.

A trip was made with one of the farmers in the valley on Thursday to a farm northwest of Torrington, Wyoming, where there were some Holstein cattle for sale. Nine high grade cows and a very good registered bull were purchased. The bull is the best individual and has the best pedigree of any Holstein bull on the project at the present time.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

There is a rapidly growing interest in the dairy business on the project and the farmers are learning that a few good cows are a much better proposition than a herd of scrubs. Quite a few farmers are keeping milk records now and these men especially are in favor of the good cows.

The little creamery which started up at Morrill about two months ago is now making ice cream and is paying \$3.00 per cwt. for whole milk. Their business is very good and the farmers are making more money by selling their whole milk at the above price than their butterfat at 42 cents per pound.

The first cutting of alfalfa is being made this week.

Uncompahgre.

During the week ending June 8, 26 farms were visited and calls were received from 14 sources. The week was taken up largely with the regular work of the office. One day was spent with the County Agent of Montrose County in weighing the pigs for the members of the Pig Club.

Two herds of cows were tested for butterfat. One day was spent with the Project Manager, Mr. Pyle, in a trip over the project. Assistance was given one sheepman in the location of a band of sheep that were offered for sale.

There is danger of a shortage of irrigation water on the project due to the small amount of snowfall. Some fields of hay and grain are showing the effect of lack of moisture.

There is an appearance of a much smaller acreage of potatoes under the project this year. Much of the cut seed rotted in the soil. Beans are being planted on fields where a poor stand of potatoes occur.

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WESTERN IRRIGATION AGRICULTURE

FIELD NOTES

Belle Fourche

During the three weeks ending June 15, the maximum temperature was 100, minimum 57 and precipitation .71 inch.

Work, during this period, consisted of plowing and cleaning ditches, hoeing weeds, irrigating, sorting potatoes, planting and hoeing garden, hoeing beets and potatoes, cultivating, mowing lawn, and mowing, raking and shocking alfalfa and brome grass.

Yuma.

During the week ending June 15, the maximum temperature was 112, minimum 71 and greatest daily range 40.

Nineteen acres were irrigated. The third cutting of alfalfa for the season was begun the latter part of the week. The last of the legumes for seed production were harvested on A13-4. Several of the bean varieties on C35 are mature. Irish Cobbler potatoes on A10-5 were dug. Apricots in the "B" orchard are mature and yielding fairly well. The last of the flax varieties were threshed.

Ten rows on A13-2 were planted to okra with a possibility of using the seed produced for oil. Sorghum and forage varieties were planted on B19 and 20 and C19. Four hundred and ninety-five plants, representing fifty varieties of chrysanthemums, were transplanted from plats pots to A14-2.

The "D" and "E" park plantings were disked and pruned. A25, dates F1, pecans, and nine acres of fallow were disked. Two acres were plowed, four acres cultivated, and four acres of cotton and legumes were hoed. Two hundred sacks of cement were delivered from Winterhaven.

San Antonio.

During the week ending June 15, the maximum temperature was 101, minimum 67 and greatest daily range 31. The total precipitation was .42, which was insufficient to be of much value to crops.

The principal field work was plowing of oat stubble and weeding. The following plats in the rotation experiments were plowed: A4-6, 14 and 18; A5-1, 4, 10, 14 and 18; A6-6 and 7; B4-18 and B3-7. Plats A6-11 and 15 were plowed and sub-spiled. Corn and sorghum varieties on field C6 were weeded. Cotton and beans on field B4 and cotton on the rotation plats were also weeded. Field D3, which is being fallowed, was double disked.

Mr. S. H. Hastings of Sacaton, Arizona, was a visitor at the station on Saturday.

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Scottsbluff.

During the week ending June 15, the maximum temperature was 90, minimum 54 and precipitation 0.

Crops look very good but rain is very badly needed. Already the water in the Government canal is being rotated. Each 80-acre unit is allowed 2 second feet, 4 days on and 4 days off. Unless it rains soon, some of the small grain will suffer.

The first cutting of alfalfa is now being harvested.

Grasshoppers are beginning to show up. Indications are that unless something is done in the way of poisoning or catching them that they will be very destructive this summer.

At the station the men have been busy irrigating, cultivating and working with the hay.

Huntley.

During the week ending June 15, the maximum temperature was 103, minimum 53, and precipitation 0.

The weather during the past ten days has been unreasonably warm, with hot dry winds. As a consequence, dry land crops are in rather poor condition, and winter wheat especially is in a good many cases firing badly. Irrigation of alfalfa and grains in the rotation experiments and in field A4 was completed.

Much damage has resulted from flood waters along the Yellowstone owing to the unprecedented hot weather melting the snows in the mountains. The water reached a mark of nearly two feet higher than any previous record and several farms lying near the river are completely flooded. All the approaches across the Yellowstone river in Yellowstone County have been closed to traffic as most of the bridge approaches are under water. At the Reclamation Camp in Huntley one building was completely lost by the banks of the river cutting away and it has been necessary to move several of the other buildings.

Mr. Hansen made a trip to the Crow Indian Reservation in company with Mr. Thackery of the Indian Service and Mr. James P. Campbell, in connection with the selection of several thousand acres of land on this reservation which will be placed under cultivation by a corporation, of which Mr. Campbell is the head. This project will include about 40,000 acres of dry land on the reservation and 15,000 acres of irrigated land.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

APPOINTMENTS

It is the wish of the Secretary that there be no recommendations for the appointment, during the period of the war, of persons born in a country which is at war with the United States or in a country allied with a country at war with the United States.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

Most of the wool from the project was consigned out during the week ending June 8. The wool from the North Side was consigned to Crimmins and Pierce of Boston. That of the South Side was consigned, a part to the Columbia Basin Wool and Warehouse Company of Portland and a part to B. Harris, of St. Louis. To date, four carloads of fleece wools have been shipped out. There are yet approximately two carloads to go.

The pooled wool of the Boise Project was sold outright to the Oregon Woolen Mills at 60 cents per pound. One hundred and thirty thousand pounds of fleece wool were shipped out in the shipment of six cars, the sacking and loading not having been as well done as on the Minidoka Project where the carload lots exceeded 30,000 pounds each.

Boys' and Girls' club work on the Project will be carried on by special club leaders appointed for this purpose. Mr. Rae, Superintendent of the Burley schools and Mr. Francisco, Superintendent of the Paul schools, will have charge of the work on the Minidoka Project during the summer vacation.

The first case of damages for sheep killed or injured by dogs came up Monday of the week ending June 15. The charges were for 5 ewes killed outright, 5 ewes badly injured, 6 lambs injured and 6 lambs left orphans, with the value of the whole flock depreciated as a result of worrying. The jury awarded \$200 to the plaintiff. The flock was a carefully selected band of young, high grade ewes.

Because of the drought, the cattle of the cooperative herd on Willow Creek were returned. The feed near the water became entirely exhausted and the cattle, which were practically all of the dairy breeds would not go farther out hence were losing weight. These cattle were formerly a part of the South Side Association.

An investigation of a suspected case of poisoning was made on the range of the North Side Grazing Association. The trouble was found to be due to the bite of a rattlesnake. One, 2-year old steer that was extremely emaciated was killed by the herders for examination. The trouble was found to be tuberculosis.

Shoshone.

During the week ending June 15, 5 farm visits were made, 26 office calls were received, 9 other conferences were held, and three milk samples were tested.

A new contract was made between the Shoshone Live Stock Association and the herder who is to have charge of the herd on the Forest Reserve range. The original contract required that all cattle should be

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Field Notes.

Shoshone.

delivered on the days set by the Board of Directors of the Association, that a valuation should be assessed by the Board of Directors on all cattle, that each man should pay herding fee of 70 cents per head per month, and that the herder should stand one-third of all losses.

Some members of the Association did not live up to the agreement, in that they delivered cattle on other days than those set by the association so that no assessment was made by the Board of Directors on their cattle. The herder had agreed to stand one-third of the loss, only on condition that all members should insure; but when some did not insure he agreed to insure part on condition that his loss be limited. So a new contract was made in which those who did not have their cattle insured, pay 60 cents per head per month, while those who had their cattle insured pay 70 cents per head per month and the herder stands one-third of all loss, provided that the herders total loss shall be limited to 2-1/2 per cent of the total assessed value of all of the cattle insured.

The herd has been held on the range joining the project on the west but the herder expects to leave for the Forest Reserve range immediately.

Considerable attention has been given this week to the marketing of wool. It seems now that it will be impossible to get all of the sheep sheared before the 25th when the rise in freight rates is due. It may be necessary to local all of the wool to Cody because those who have sheared will prefer to local their wool to Cody and get it shipped out of there before the 25th, rather than stand the rise in freight rate; while those who do not get sheared in time will have to local to Cody and stand both the local freight and the rise in the car lot freight. One man who is having trouble getting sheared will probably lose about \$85 on freight by being late. There is not enough wool on the project to make a car lot shipment unless practically all of it is included.

Tieton.

Four call for assistance were answered by farm visits and sixteen office conferences were held during the week ending May 11. The greater part of the time was spent in the office reviewing dairy and swine data pertinent to local problems and plans for the season.

Although the crops made an early start and farm field work has been done in good time and shape the cool weather has been a serious check to crop growth. Light frosts still occur frequently and the upper Tieton has had several near-serious freezes.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Tieton (continued).

Four calls for assistance were answered, 14 farms were visited and 7 conferences were held during the week ending May 18. Mr. Farrell spent one and one-half days on the project.

Weather conditions are slightly improved this week and the alfalfa and small grains are beginning to make good growth. Several of the pea and barley fields being grown for hogging-off are in excellent condition and others are not at all promising. Present conditions indicate the importance of a well prepared, or at least firm, seed bed and plenty of moisture to give the peas a start. One field of peas of spring plowed alfalfa sod which had evidently not been kept well watered is in very poor condition at this time.

The markets for farm products and live stock remain unchanged. Milling feeds are rather scarce although it is expected that they will be sufficient for later needs.

Six calls for assistance were received during the week ending May 25, 15 farm visits were made and two office conferences were held. One day was spent at summarizing last year's records of the local cow testing association.

One day was spent on the spring range investigating the cause of illness and deaths in the project herd. A post mortem examination and the location of patches of larkspur indicated that this weed was causing the trouble. The early range is drying out early this year and the herd will be moved into the Tieton Basin, the summer range, about 30 days earlier than usual.

There seems to be an unusual amount of trouble at this time with retained placentas among dairy herds. A greater part of this has occurred among cows on dry feed. The problem of sterility continues to attend the industry although not to cause appreciable loss.

During the week ending June 1, 4 calls for assistance were answered, 14 farms were visited, and 3 office conferences were held. A hogging-off pea and barley demonstration was planned with Mr. Fraser. A part of one afternoon was spent with the agricultural committee of the Yakima Commercial Club planning for the county exhibit at the State Fair this fall. Some more work was done with the cow testing association records.

Present prices of pigs are tending to stimulate production to a marked degree but many farmers are afraid that grain prices are too high to allow a margin of profit.

A present problem in this regard is to assist in carrying the spring crops economically until the present crops are ready for use. There are practically no pigs being finished for early summer market.

THE HISTORY OF THE UNITED STATES

1875

The history of the United States is a story of growth and expansion. From a small collection of colonies on the eastern seaboard, it grew into a vast nation that stretched across the continent. The early years were marked by struggle and conflict, but the spirit of independence and self-determination prevailed. The American Revolution was a turning point, leading to the birth of a new nation. The years following were a period of rapid growth and development, as the United States expanded its territory and its influence. The Civil War was a defining moment, testing the nation's unity and its commitment to the principles of liberty and equality. The Reconstruction era followed, a period of challenge and progress. The United States emerged from the war a stronger and more unified nation, ready to take its place among the great powers of the world.

The United States has a rich and diverse history, shaped by the experiences of many different peoples. The early settlers brought with them the traditions and customs of Europe, while the Native Americans provided a unique perspective on the land and its resources. The African American experience is a central part of the nation's history, a story of resilience and the struggle for equality. The westward expansion of the United States was a defining feature of its early history, as settlers sought new opportunities and a better life. The American Dream, the belief that anyone can achieve success and prosperity through hard work and determination, is a core value of the United States. The nation's history is a testament to the power of the human spirit and the ability to overcome adversity.

The United States has a long and proud history of leadership in the world. From the American Revolution to the present day, the United States has been a force for freedom and democracy. The nation's values and principles have inspired people around the world, and the United States has played a leading role in the development of the modern world. The American Revolution was a landmark event, leading to the birth of a new nation that was based on the principles of liberty, justice, and equality. The United States has a rich and diverse history, shaped by the experiences of many different peoples. The nation's history is a testament to the power of the human spirit and the ability to overcome adversity.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton.

There were no calls for assistance during the week ending June 8, 17 farms were visited and 3 office conferences were held.

The entire week was spent on bull association organization work. Four prospective blocks were arranged and several other communities were visited in this regard. Some time was spent in the Tieton City district where it was found that the several small herds which were at one time provisionally gathered into a block had been broken up due to labor difficulties, increased acreage and the development of orchards rather than to any dissatisfaction with dairying as an industry. It was impossible to unite on community for this purpose because the largest dairyman had planned to buy an exceptionally good bull for his own use next season and prefers not to unite with the association because he fears that the association bulls would not be good enough for his use.

A meeting was held at Alexander's farm the evening of the 7th which was attended by men from the four outlined blocks. Two of the bulls which it was planned to include in the association are owned by clubs. One member of each club was somewhat opposed to the plan of organization and the evening was spent in discussion of objections and benefits of organization.

Five of the seven men were entirely favorable to organization and agreed to do some educational work of their own accord to help create an organization sometime this year.

Three calls for assistance were answered, 21 farm visits were made, and six office conferences were held during the week ending June 15. One day was spent in taking the first weighings of the two lots of pigs on "life long" demonstrations and in helping Messrs. Lewis and Beddoe in castrating, dipping and arranging pastures.

One day was spent with Mr. Kehrl, of the U. S. Dairy Division, in making a final canvass of the bull association proposition and outlining work to be accomplished cooperatively by the men who favor the organization and this office.

There is considerable dissatisfaction among farmers at present in regard to the Council of Defenses' new ruling that all stores open at 9 A.M. and close at 6:00 P.M., except drug stores. Their contention lies in the fact that this will require farmers who customarily do their weekly shopping on Saturday evening to take day light time from their work in which to go to town. Many question the advisability of interfering with the very essential work of farm owners or laborers in this manner.

THE HISTORY OF THE UNITED STATES

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The first part of the book is devoted to a general survey of the history of the United States from the discovery of the continent to the present time. It is divided into three main periods: the colonial period, the revolutionary period, and the national period. The colonial period is characterized by the struggle for independence from Great Britain, which culminated in the American Revolution of 1776. The revolutionary period is marked by the establishment of the new government under the Constitution of 1787. The national period is characterized by the expansion of the United States across the continent and the development of a strong national identity.

The second part of the book is devoted to a detailed account of the American Revolution. It begins with the outbreak of hostilities in 1775 and follows the course of the war through the decisive battles of the Saratoga and Yorktown. It also covers the political and social changes that accompanied the revolution, such as the adoption of the Declaration of Independence and the Constitution.

The third part of the book is devoted to the history of the United States from the end of the American Revolution to the present time. It covers the period of territorial expansion, the development of the industrial revolution, and the rise of the United States as a world power. It also discusses the various social and political movements that have shaped the nation, such as the abolitionist movement and the women's suffrage movement.

The fourth part of the book is devoted to a general survey of the history of the United States from the present time to the future. It discusses the current state of the nation and the challenges it faces, such as the issue of race and the environment. It also offers a vision of the future of the United States and the role it should play in the world.

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MEMORANDUM

MEMORANDUM FOR THE RECORD

MEMORANDUM

1. This memorandum is submitted for your information and guidance regarding the proposed changes in the organization of the Department of the Interior, which are being considered by the Commission on Organization of the Executive Branch of the Government.

2. The Commission has recommended that the Department of the Interior be reorganized to include the following functions:

3. The proposed reorganization of the Department of the Interior is being considered by the Commission on Organization of the Executive Branch of the Government.

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MEMORANDUM

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